

PB88-165451

R,D,T & E PROGRAMS (R-1)
DEPARTMENT OF DEFENSE BUDGET FOR
FISCAL YEARS 1988 AND 1989

(U.S.) Department of Defense
Washington, DC

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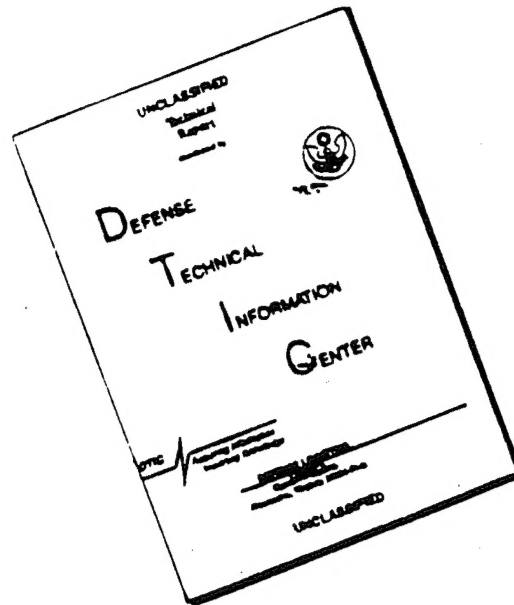
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R, D, T & E PROGRAMS (R-1)



DEPARTMENT OF DEFENSE BUDGET FOR FISCAL YEARS 1988 AND 1989

FEBRUARY 1988
Amended FY 1988/1989 Biennial Budget

REPRODUCED BY
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Preface

The R.D.T. & E. Programs (R-1) exhibit is derived from and consistent with the R.D.T. & E. Annex data base.

The R-1 is provided annually to the DoD oversight committees of the Congress coincident with the transmission by the President of the Budget of the United States Government. An unclassified version is provided to OASD(PA) for use by non-DoD activities.

Office of the Assistant Secretary of Defense

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TABLE OF CONTENTS

	<u>PAGE</u>
<u>DoD Component Summary</u>	
<u>Army</u>	
Army Summary	II & III
Army R-1 Detail	A-I
<u>Navy</u>	
Navy Summary	A-1 through A-11
Navy R-1 Detail	N-I
<u>Air Force</u>	
Air Force Summary	N-1 through N-16
Air Force R-1 Detail	F-I
<u>Defense Agencies</u>	
Defense Agency Summary	F-1 through F-15
Defense Agency R-1 Detail	D-I & D-II
Director, Test and Evaluation Summary	D-1 through D-5
Director, Test and Evaluation R-1 Detail	D-6
Director, Operational Test and Evaluation Summary	D-7
Director, Operational Test and Evaluation R-1 Detail	D-8
Individual Defense Agency R-1 Detail	D-9
	D-10 through D-23

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Department of Defense
FY 1989 R D T & E Program

Exhibit R-1

Summary

Date: February 1988

Thousands of Dollars

	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED FY 1989
Summary By Appropriation					
Research Development Test & Eval Army	4,699,035	4,670,659	5,972,845	-942,145	5,030,700
Research Development Test & Eval Navy	9,292,433	9,512,917	10,044,819	-828,619	9,216,200
Research Development Test & Eval AF	15,050,523	15,165,388	17,728,571	-2,796,471	14,932,100
Research Development Test & Eval Def Ag	6,768,110	7,661,825	10,120,664	-1,452,864	8,667,800
Director of Test & Eval Defense	119,906	182,116	186,128	-19,228	166,900
Director of Operational Test & Evaluation	11,300	70,221	149,657	-6,257	143,400
Total Research, Development, Test & Evaluation	35,941,307	37,263,126	44,202,684	-6,045,584	38,157,100
Summary Recap of Research Categories					
Research	893,587	901,403	985,808	-69,322	916,486
Exploratory Development	2,343,208	2,392,306	2,657,515	-296,644	2,360,871
Advanced Development	10,426,308	12,445,534	16,047,465	-4,873,317	11,174,148
Engineering Development	9,340,599	9,640,526	12,971,785	-1,384,299	11,587,486
Management and Support	2,942,697	2,513,750	2,764,294	-204,541	2,559,753
Research and Development (FYDP Program 6)	25,946,399	27,893,519	35,426,867	-6,828,123	28,598,744
Operational Systems Development	9,994,908	9,369,607	8,775,817	782,539	9,558,356
Total Research, Development, Test & Evaluation	35,941,307	37,263,126	44,202,684	-6,045,584	38,157,100

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Department of Defense
FY 1989 R D T & E Program

Exhibit R-1

Summary

Date: February 1988

	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED FY 1989
					Thousands of Dollars
Summary Recap of Budget Activities					
Technology Base	3,236,795	3,293,709	3,643,323	-365,966	3,277,357
Advanced Technology Development	5,031,803	5,433,672	8,477,821	-1,970,528	6,507,293
Strategic Programs	7,703,300	7,390,674	9,222,921	-2,698,314	6,524,607
Tactical Programs	11,031,555	12,211,715	13,826,516	-733,857	13,092,659
Intelligence and Communications	4,702,339	4,882,161	4,841,956	-372,134	4,469,822
Defensewide Mission Support	4,235,515	4,051,195	4,190,147	95,215	4,285,362
Total Research, Development, Test & Evaluation	35,941,307	37,263,126	44,202,684	-6,045,584	38,157,100
Summary Recap of FYDP Programs					
Strategic Forces	1,147,222	831,973	813,283	-116,467	696,816
General Purpose Forces	2,192,007	1,762,879	1,724,294	287,573	2,011,867
Intelligence and Communications	6,361,788	6,244,624	5,744,597	460,298	6,204,895
Airlift/Sealift	97,017	26,922	128,397	-115,463	12,934
Guard and Reserve	37,318	59,965	83,367	-79	83,288
Research and Development (FYDP Program 6)	25,946,399	27,893,519	35,426,867	-6,828,123	28,598,744
Central Supply and Maintenance	150,662	177,235	278,231	-60,750	217,481
Training Medical and Other	4,424				
Support of Other Nations	4,320	3,591	3,648	530	4,178
Special Operations Forces	150	262,418		326,897	326,897
Total Research, Development, Test & Evaluation	35,941,307	37,263,126	44,202,684	-6,045,584	38,157,100

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Page III

UNCLASSIFIED

Department of the Army
FY 1989 R D T & E Program

Exhibit R-1

Summary

Date: February 1988

Thousands of Dollars

	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED FY 1989
Summary Recap of Research Categories					
Research					
Exploratory Development	219,459	168,936	197,642	-24,137	173,505
Advanced Development	637,050	548,922	652,658	-74,198	578,460
Engineering Development	1,162,567	1,094,338	1,434,264	-328,916	1,105,348
Management and Support	982,135	1,102,594	2,013,716	-592,579	1,421,137
	1,054,431	1,063,682	1,191,779	-86,912	1,104,867
Research and Development (FYDP Program 6)					
Operational Systems Development	4,055,642	3,978,472	5,490,059	-1,106,742	4,383,317
	643,393	692,187	482,786	164,597	647,383
Total Research Development Test & Eval Army	4,699,035	4,670,659	5,972,845	-942,145	5,030,700
Summary Recap of Budget Activities					
Technology Base					
Advanced Technology Development	856,509	717,858	850,300	-98,335	751,965
Strategic Programs	432,797	353,969	488,782	-114,425	374,357
Tactical Programs	227,219	118,462	87,233	-7,125	80,108
Intelligence and Communications	1,971,227	2,294,469	3,264,368	-611,253	2,653,115
Defensewide Mission Support	95,429	107,718	74,899	-22,496	52,403
	1,115,854	1,078,183	1,207,263	-88,511	1,118,752
Total Research Development Test & Eval Army	4,699,035	4,670,659	5,972,845	-942,145	5,030,700
Summary Recap of FYDP Programs					
Strategic Forces					
General Purpose Forces	199,796	86,861	57,051	-125	56,926
Intelligence and Communications	296,490	357,011	313,294	63,747	377,041
Research and Development (FYDP Program 6)	118,964	124,154	90,426	-29,498	60,928
Central Supply and Maintenance	4,055,642	3,978,472	5,490,059	-1,106,742	4,383,317
Special Operations Forces	27,993	20,904	22,015	-2,163	19,852
	150	103,257		132,636	132,636
Total Research Development Test & Eval Army	4,699,035	4,670,659	5,972,845	-942,145	5,030,700

UNCLASSIFIED

Page A-I

UNCLASSIFIED

Department of the Army
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: February 1988

Program Line Element No	Program Element Number	Item Nomenclature	Act	Thousands of Dollars					
				FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 C	
1	0601101A	In-House Laboratory Independent Research	1	16,675					U
2	0601102A	Defense Research Sciences	1	194,452	168,936	117,369	56,136	173,505	U
3	0601103A	University Research Sciences	1	8,332		80,273	-80,273		U
4	0602105A	Materials Technology	1	17,244	11,589	13,141	-178	12,963	U
5	0602120A	Electronic Survivability and Fuzing Technology	1	38,487	43,163	42,157	-1,262	40,895	U
6	0602122A	Survivability Enhancement	1						
7	0602211A	Aviation Technology	1						
8	0602303A	Missile Technology	1	25,131	28,951	24,158	1,583	25,741	U
9	0602307A	Laser Weapons Technology	1	5,585	10,000	12,871	-6,505	6,366	U
10	0602601A	Combat Vehicle and Automotive Technology	1	24,970	22,610	21,908	385	22,293	U
11	0602618A	Ballistics Technology	1	48,253	22,775	34,909	-7,588	27,321	U
12	0602622A	Chemical, Smoke and Equipment Defeating Technology	1	55,775	45,079	42,387	-886	41,501	U
13	0602623A	Joint Service Small Arms Program	1	10,751	12,857	15,553	-1,417	14,136	U
14	0602624A	Weapons and Munitions Technology	1	23,227	21,931	30,997	216	31,213	U
15	0602705A	Electronics and Electronic Devices	1	20,688	21,717	22,499	-738	21,761	U
16	0602709A	Night Vision Technology	1	29,811	22,394	24,817	-1,992	22,825	U
17	0602715A	Electronic Warfare Technology	1						
18	0602716A	Human Factors Engineering Technology	1	21,148	14,560	15,071	-68	15,003	U
19	0602720A	Environmental Quality Technology	1	11,118	9,915	9,581	-39	9,542	U

Page A-1-A

UNCLASSIFIED

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Department of the Army
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: February 1988

Program Line Element No Number		Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
Thousands of Dollars								
20	0602727A	Non-System Training Device Technology	1	3,666	4,011	3,429		3,429 U
21	0602770A	Military Disease Hazards Technology	1	41,997	46,137	49,635	-1,353	48,282 U
22	0602782A	Command, Control, Communications Technology	1	32,090	9,764	29,578	-17,000	12,578 U
23	0602783A	Computer and Software Technology	1	8,471	8,221	6,461	-7	6,454 U
24	0602784A	Military Engineering Technology	1	43,478	36,905	49,552	-2,577	46,975 U
25	0602785A	Manpower/Personnel/Training Technology	1	15,300	15,476	17,981	-116	17,865 U
26	0602786A	Logistics Technology	1	35,533	34,513	45,182	-3,118	42,064 U
27	0602787A	Medical Technology	1	68,711	54,701	63,310	-5,533	57,777 U
Technology Base				856,509	717,858	850,300	-98,335	751,965
28	0603001A	Logistics Advanced Technology	2	14,582	10,000	19,343	-9,384	9,959 U
29	0603002A	Medical Advanced Technology	2	30,916	33,656	51,772	-17,276	34,496 U
30	0603003A	Aviation Advanced Technology	2	60,464	39,000	40,810	-5,500	35,310 U
31	0603004A	Weapons and Munitions Advanced Technology	2	24,397	24,914	41,562	-2,122	39,440 U
32	0603005A	Combat Vehicle and Automotive Advanced Technology	2	47,597	39,612	54,262	-8,011	46,251 U
33	0603006A	Command, Control, Communications Advanced Technology	2	12,380	7,485	9,759	-2,034	7,725 U
34	0603007A	Human Factors/Personnel/Training Advanced Technology	2	28,787	28,486	46,677	-16,133	30,544 U
35	0603008A	Electronic Warfare Advanced Technology	2					
36	0603102A	Materials and Structures Advanced Technology	2	15,641	8,185	9,206	-2,270	6,936 U
37	0603105A	Acquired Immune Deficiency Syndrome (AIDS) Research	2	18,551	11,500	12,000	-3,177	8,823 U

Page A-2

UNCLASSIFIED

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Department of the Army
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: February 1988

Program Line Element No Number		Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED & FY 1989 C
Thousands of Dollars								
38	0603255A	Operational Enhancements	2			14,228	-14,228	U
39	0603270A	EW Technology	2	50,144	39,468			
40	0603313A	Missile and Rocket Advanced Technology	2	33,879	18,000	16,363	-2,776	13,587 U
41	0603314A	Directed Energy	2			32,387	-24,600	7,787 U
42	0603321A	Target Acquisition, Counter/Counter- Countermeasures	2					
43	0603324A	Army Development and Employment Agency	2	9,425	10,936	17,288	-15,300	1,988 U
44	0603606A	Landmine Warfare and Barrier Advanced Technology	2	23,493	10,675	11,579	-2,500	9,079 U
45	0603607A	Joint Service Small Arms Program	2	6,552	8,820	9,564		9,564 U
46	0603710A	Night Vision Advanced Technology	2	28,783	23,653	26,169	-2,500	23,669 U
47	0603733A	Environmental Quality Control Equipment	2	3,595	3,050			U
48	0603734A	Military Engineering Advanced Technology	2	3,814	3,902	2,338		2,338 U
49	0603742A	Advanced Electronic Devices	2	4,491	6,089	7,924	-2,696	5,228 U
50	0603758A	Army Battlefield Technology Integration	2	11,227	9,100	9,601		9,601 U
51	0603759A	Chemical Biological Defense and Smoke Advanced Technology	2	3,015	3,564	3,450		3,450 U
52	0603772A	Advanced Tactical Computer Science Technology	2	1,064	6,117	8,501	-2,000	6,501 U
53	1140011A	Advanced Special Operations Research, Development and Acquisition	2		7,757		14,228	14,228 U
Advanced Technology Development				432,797	353,969	488,782	-114,425	374,357
54	0102814A	Special Programs	3					
55	0102821A	Classified Program	3					

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Department of the Army
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: February 1988

Line No	Program Element No	Item Nomenclature	Act	FY 1987	FY 1988	Thousands of Dollars		FY 1989 ADJUSTMENT	FY 1989 AMENDED e FY 1989 C
						FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT		
56	0303152A	World-Wide Military Command and Control Systems, Information System	3	27,423					S
		Strategic Programs							
57	0603220A	Advanced Rotocraft Technology Integration LHX	4	38,385	118,462	87,233	-7,125	80,108	U
58	0603302A	Antitactical Missile System	4	28,994	22,076	85,853	-54,339	31,514	U
59	0603303A	Surface-to-Surface Missile Rocket System	4	40,136	24,000	37,071	-880	36,191	U
60	0603604A	Nuclear Munitions and Radiacs - Adv Dev	4	7,020	5,841				
61	0603612A	Advanced Anti-Tank Weapon System	4	52,455	33,566	117,446	-95,683	21,763	U
62	0603619A	Landmine Warfare and Barrier - Adv Dev	4	6,667	15,783	16,845	-4,349	12,496	U
63	0603627A	Smoke and Equipment Defeating Systems - Adv Dev	4	4,545	7,375	8,518	-3,519	4,999	U
64	0603639A	Aramament Enhancement Initiative	4						
65	0603642A	Evolutionary Surface-to-Air Missile - Adv Dev	4			3,061	-8	3,053	U
66	0603645A	Armored Family of Vehicles - Advanced Development	4		1,000	44,970	-43,973	997	U
67	0603705A	Physical Security	4	462		2,907	-113	2,794	U
68	0603706A	Identification-Friend-or-Foe - Adv Dev	4	18,802	10,000	14,940	-129	14,811	U
69	0603711A	Aircraft Survivability Equipment	4			12,548	-12,548		U
70	0603713A	Army Data Distribution System	4	39,343	28,000	25,500	-5,550	19,950	U
71	0603718A	Electronic Warfare Systems - Adv Dev	4			16,546	-16,546		U
72	0603725A	Remotely Piloted Vehicles and Drones - Adv Dev	4	9,596		6,598	-6,598		U
73	0603730A	Tactical Surveillance System - Adv Dev	4	8,591	34,166				

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Page A-4

UNCLASSIFIED

Department of the Army
FY 1989 R D T & E Program

Exhibit R-1

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Program Line Element No	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
74	0603738A Non-System Training Devices - Adv Dev	4	3,329		862	-2	860 U
75	0603740A Air Defense Command, Control and Intelligence (C2I) - Adv Dev	4	4,512	4,337			U
76	0603745A Tactical Electronic Support Measure Systems	4	7,700	5,735			
77	0603747A Soldier Support and Survivability	4	4,237	3,864	4,553	-1,123	3,430 U
78	0603751A Medical Defense Against Chemical Warfare	4	23,905	27,100	28,997	-11,557	17,440 U
79	0603754A Classified Program (Adv)	4					
80	0603755A Tactical Electronic Countermeasures Systems - Adv Dev	4	1,562				
81	0603757A Forward Area Air Defense (FAAD) System	4	83,902	157,000	166,461	-2,249	164,212 U
82	0603760A Special Operations Forces Equipment - Adv Dev	4			21,579	-21,579	U
83	0603766A Tactical Electronic Surveillance System - Adv Dev	4	11,555	11,959			
84	0603774A Night Vision Systems Advanced Development	4	1	3,355	3,932	-9	3,923 U
85	0603775A Light Armored Vehicle/Weasel Evaluation	4	9,823	1,000			U
86	0603776A Airborne Adverse Weather Weapons System	4		80,000	87,339	-219	87,120 U
87	0603777A Follow-On LANCE - Adv Dev	4				14,962	14,962 U
88	0603801A Aviation - Adv Dev	4	5,291	3,039	4,362	-13	4,349 U
89	0603802A Weapons and Munitions - Adv Dev	4	17,058	14,399	12,288	-5	12,283 U
90	0603803A Chemical Systems - Adv Dev	4	19,748	15,325			U
91	0603804A Logistics and Engineer Equipment - Adv Dev	4	22,368	16,999	18,987	-6,086	12,901 U
92	0603805A Combat Service Support Computer System Evaluation and Analysis	4	5,438	1,195	1,426	-4	1,422 U

Page A-5

UNCLASSIFIED

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Department of the Army
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: February 1988

Program Line Element No	Program Element Number	Item Nomenclature	Act	Thousands of Dollars				
				FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 C
93	0603806A	Chemical/Biological Defense Equipment - Adv Dev	4	7,886	10,508	5,513	1,847	7,360 U
94	0603807A	Medical Systems - Adv Dev	4	26,541	21,863	24,379	-5,500	18,879 U
95	0604202A	Aircraft Weapons	4	982	9,697	12,500	-8,039	4,461 U
96	0604216A	Alrcraft Propulsion System	4	100,921	100,000	65,938	-10,140	55,798 U
97	0604223A	Light Armed Scout Helicopter	4		30,000	532,064	-407,377	124,687 U
98	0604270A	EW Development	4	70,136	44,499			
99	0604306A	STINGER	4	6,409	7,747			U
100	0604310A	Heliborne Missile - HELIFIRE	4	1,966	2,463			U
101	0604313A	GRASS BLADE	4	2,886	4,953	14,615	-4,896	9,719 U
102	0604321A	Joint Tactical Fuslon Program	4	152,896	152,385			
103	0604324A	Army Tactical Missile System (Army TACHS)	4	76,341	101,250	86,618	-2,181	84,437 U
104	0604601A	Infantry Support Weapons	4	808				U
105	0604603A	Nuclear Munitions and Radiac - Eng Dev	4	22,380	17,386			
106	0604604A	Medium Tactical Vehicles	4		9,906	23,555	1,392	24,947 U
107	0604609A	Smoke and Equipment Defeating Systems - Eng Dev	4	6,437	9,978	13,229	-4,850	8,379 U
108	0604611A	Advanced Anti-Tank Weapon System - Eng Dev	4			114,239	-3,730	110,509 U
109	0604622A	Family of Heavy Tactical Vehicles	4		4,953		28,825	28,825 U
110	0604630A	MLAI Development Program	4	3,618				U
111	0604702A	Joint Tactical Information Distribution System	4		4,267			U

UNCLASSIFIED

Page A-6

UNCLASSIFIED

Department of the Army
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars					S
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c	
112 0604709A	Identification-Friend-or-Foe - Eng Dev	4	410	16,841	33,181	-7,369	25,812	U
113 0604710A	Night Vision Systems - Eng Dev	4	6,021	15,128	22,630	-6,042	16,588	U
114 0604711A	Aircraft Survivability Equipment	4			18,283	-18,283		U
115 0604713A	Combat Feeding, Clothing, and Equipment	4	2,988	1,915	3,244	-826	2,418	U
116 0604715A	Non-System Training Devices - Eng Dev	4	35,286	24,745	24,867	-5,077	19,790	U
117 0604718A	Physical Security	4	7,886	2,974	4,894	-1,139	3,755	U
118 0604722A	Education and Training Systems Development	4	4,170	5,396	6,889	-17	6,872	U
119 0604723A	Special Purpose Detectors	4	1,126	1,417	484	-1	483	U
120 0604726A	Meteorological Equipment and Systems	4	3,723	592	1,615	-4	1,611	U
121 0604730A	Remotely Piloted Vehicles - Eng Dev	4	65,151		29,600	-29,600		U
122 0604736A	Project Sierra	4						
123 0604737A	Unmanned Aerial Vehicles - Eng Dev	4			11,138	-11,138		U
124 0604740A	Tactical Surveillance System - Eng Dev	4	13,514	7,759				
125 0604741A	Air Defense Command, Control and Intelligence - Eng Dev	4	37,547	90,262	167,254	-68,963	98,291	U
126 0604746A	Automatic Test Equipment Development	4	10,407	6,923	14,408	-5,034	9,374	U
127 0604750A	Tactical Electronic Countermeasures - Eng Dev	4						
128 0604754A	Classified Program (Eng)	4						
129 0604757A	Medical Chemical Defense Life Support Material	4	9,094	7,633	8,529	-2,271	6,258	U
130 0604766A	Tactical Electronic Surveillance System - Eng Dev	4	15,727	18,666				

UNCLASSIFIED

Page A-7

UNCLASSIFIED

Department of the Army
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: February 1988

Program Line Element No	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e' FY 1989 c	Thousands of Dollars
131 0604770A	Joint Surveillance/Target Attack Radar System	4	26,546	18,224	15,430	3,752	19,182 U	
132 0604779A	Joint Interoperability of Tactical Command & Control Systems (JINTACCS)	4	13,864	14,860	17,828	-44	17,784 U	
133 0604801A	Aviation - Eng Dev	4	9,440	9,903	13,089	-2,060	11,029 U	
134 0604802A	Weapons and Munitions - Eng Dev	4	102,493	110,855	133,919	-1,324	132,595 U	
135 0604803A	Chemical Systems - Eng Dev	4		14,191	29,370	8,279	37,649 U	
136 0604804A	Logistics and Engineer Equipment - Eng Dev	4	17,222	11,886	18,150	-4,573	13,577 U	
137 0604805A	Command, Control, Communications Systems - Eng Dev	4	18,926	13,858	10,356	-45	10,311 U	
138 0604806A	Chemical/Biological Defense Equipment - Eng Dev	4	38,312	22,905	20,205	-6,943	13,262 U	
139 0604807A	Medical Materiel/Medical Biological Defense Equipment - Eng Dev	4	11,524	13,327	17,998	-4,173	13,825 U	
140 0604808A	Landmine Warfare/Barrier - Eng Dev	4	19,679	14,703	14,969	-130	14,839 U	
141 0605710A	Joint CB Point of Contact, Test and Assessment	4	5,953	6,403	6,531	-564	5,967 U	
142 0203726A	Adv Field Artillery Tactical Data System	4	10,301	14,797	25,753	-8,036	17,717 U	
143 0203735A	Combat Vehicle Improvement Programs	4	78,720	122,746	81,170	1,667	82,837 U	
144 0203739A	Air Defense C21 Mods	4		4,000	18,833	-10,172	8,661 U	
145 0203740A	Maneuver Control System	4	12,576	13,971	12,004	-32	11,972 U	
146 0203743A	155mm Self-Propelled Howitzer Improvements	4	37,642	29,988	24,513	-4,569	19,944 U	
147 0203744A	Aircraft Modifications/Product Improvement Programs	4		55,000	4,832	130,628	135,460 U	
148 0203745A	Weapons and Munitions Equipment Upgrade Program	4	39,683	26,327	4,845	-12	4,833 U	
149 0203751A	Special Operations Forces Equipment	4	41,860		29,829	-29,829	U	

UNCLASSIFIED

Page A-8

UNCLASSIFIED

Department of the Army
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: February 1988

Program Line Element No	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 C	S
								Thousands of Dollars
150	0203752A Aircraft Engine Component Improvement Program	4	2,531	6,144	7,744	4,170	11,914	U
151	0203801A Missile/Air Defense Product Improvement Program	4	41,385	31,040	64,359	-25,350	39,009	U
152	0203802A Other Missile Product Improvement Programs	4	14,022	40,000	25,454	5,349	30,803	U
153	0208010A Joint Tactical Communications Program (TRI-TAC)	4	17,770	12,998	13,958	-67	13,891	U
154	0303145A EUCOM C3 Systems	4	1,038	1,289	636	-2	634	U
155	1110011A Force Enhancements-Active	4	150	95,500		118,408	118,408	U
Tactical Programs								
156	0604201A Aircraft Avionics	5	168	1,971,227	3,264,368	-611,253	2,653,115	U
157	0604716A Mapping and Geodesy - Eng Dev	5	264	6,459	6,488		6,488	U
158	0604778A NAVSTAR Global Positioning System (User Equipment)	5	4,494	9,995	8,803		8,803	U
159	0301307A Foreign Science and Technology Center	5						
160	0301318A HUMINT (Controlled)	5						
161	0301327A Technical Reconnaissance and Surveillance	5						
162	0301334A Other Commands GDIP Activities	5						
163	0301359A Special Army Program	5						
164	0303126A Long-Haul Communications (DCS)	5	2,116					U
165	0303142A SATCOM Ground Environment	5	71,418	74,966	46,694	-19,996	26,698	U
166	0303401A Communications Security (COMSEC)	5	6,001	5,217	5,126		5,126	U
Intelligence and Communications								
			95,429	107,718	74,899	-22,496	52,403	

UNCLASSIFIED

Page A-9

UNCLASSIFIED

Department of the Army
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars					
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c	
167	0603790A NATO Research and Development	6	39,383					U
168	0605301A Kwajalein Missile Range	6	151,081	150,729	184,957	-20,102	164,855	U
169	0605502A Small Business Innovative Research	6	37,462					U
170	0605601A Army Test Ranges and Facilities	6	238,620	191,103	209,732	-18,716	191,016	U
171	0605602A Army Technical Test Instrumentation and Targets	6	19,562	62,500	79,182	-19,072	60,110	U
172	0605603A Army User Test Instrumentation and Threat Simulators	6	40,625	59,186	73,188	-9,252	63,936	U
173	0605702A Meteorological Support to RDT&E Activities	6	16,680	19,195	20,155	-1,267	18,888	U
174	0605706A Materiel Systems Analysis	6	21,994	22,264	26,413	-2,630	23,783	U
175	0605709A Exploitation of Foreign Items	6	3,800	4,390	4,362	-2	4,360	U
176	0605712A Support of Operational Testing	6	44,175	49,796	61,484	-10,135	51,349	U
177	0605801A Programwide Activities	6	74,091	82,349	87,835	-4,680	83,155	U
178	0605802A International Cooperative Research and Development	6	932	1,093	1,136		1,136	U
179	0605803A Technical Information Activities	6	5,213	5,500	6,403	-600	5,803	U
180	0605805A Munitions Standardization, Effectiveness and Safety	6	10,593	14,331	16,185	-3,204	12,981	U
181	0605810A RDT&E Support for Nondevelopmental Items	6	7,984	17,842	8,283		8,283	U
182	0605872A Productivity Investments	6	24,069	35,000	31,576	18,371	49,947	U
183	0605894A Real Property Maintenance - RDT&E	6	157,812	155,000	171,106	-9,132	161,974	U
184	0605896A Base Operations - RDT&E	6	181,679	177,500	189,524	-5,816	183,708	U
185	0605898A Management Headquarters (Research and Development)	6	12,106	9,501	13,727	-111	13,616	U

UNCLASSIFIED

UNCLASSIFIED

Department of the Army
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 2040 A Research Development Test & Eval Army

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c	S
Thousands of Dollars								
186 0708011A	Industrial Preparedness	6	27,993	20,904	22,015	-2,163	19,852	U
	Defensewide Mission Support		1,115,854	1,078,183	1,207,263	-88,511	1,118,752	
	Total Research Development Test & Eval Army		4,699,035	4,670,659	5,972,845	-942,145	5,030,700	

UNCLASSIFIED

Page A-11

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Summary

Date: February 1988

	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED FY 1989
					Thousands of Dollars
Summary Recap of Research Categories					
Research	353,140	342,016	417,277	-60,525	356,752
Exploratory Development	431,981	407,951	477,149	-61,262	415,887
Advanced Development	1,872,666	2,664,694	3,305,201	-1,378,777	1,926,424
Engineering Development	4,594,985	4,360,394	3,920,101	653,261	4,573,362
Management and Support	588,813	581,206	636,244	-52,351	583,893
Research and Development (FYDP Program 6)	7,841,585	8,356,261	8,755,972	-899,654	7,856,318
Operational Systems Development	1,450,848	1,156,656	1,288,847	71,035	1,359,882
Total Research Development Test & Eval Navy	9,292,433	9,512,917	10,044,819	-828,619	9,216,200
Summary Recap of Budget Activities					
Technology Base	785,121	749,967	894,426	-121,787	772,639
Advanced Technology Development	143,949	233,356	297,745	-93,721	204,024
Strategic Programs	1,813,145	1,252,122	894,391	-113,380	781,011
Tactical Programs	5,173,554	5,663,053	6,207,442	-215,002	5,992,440
Intelligence and Communications	625,769	913,856	977,239	-225,526	751,713
Defensewide Mission Support	750,895	700,563	773,576	-59,203	714,373
Total Research Development Test & Eval Navy	9,292,433	9,512,917	10,044,819	-828,619	9,216,200
Summary Recap of FYDP Programs					
Strategic Forces	210,266	180,711	210,736	-39,670	171,066
General Purpose Forces	702,742	393,386	499,943	19,170	519,113
Intelligence and Communications	499,879	520,894	532,216	74,274	606,490
Research and Development (FYDP Program 6)	7,841,585	8,356,261	8,755,972	-899,654	7,856,318
Central Supply and Maintenance	37,961	42,331	45,952	-2,470	43,482
Special Operations Forces		19,334		19,731	19,731
Total Research Development Test & Eval Navy	9,292,433	9,512,917	10,044,819	-828,619	9,216,200

UNCLASSIFIED

Page N-I

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
1	0601103N University Research Initiatives	1	10,590		24,603	-24,603	U
2	0601152N In-House Independent Laboratory Research	1	23,320	22,627	23,763		23,763 U
3	0601153N Defense Research Sciences	1	319,230	319,389	368,911	-35,922	332,989 U
4	0602111N Anti-Air Warfare/Anti-Surface Warfare Technology	1	64,662	54,273	69,100	-13,701	55,399 U
5	0602113N Electronic Warfare Technology	1	14,724		15,098	-15,098	U
6	0602121N Surface Ship Technology	1	12,349	12,953	13,976	-692	13,284 U
7	0602122N Aircraft Technology	1	19,729	20,700	19,558	2,910	22,468 U
8	0602131M Marine Corps Landing Force Technology	1	14,843	15,915	16,283	-1,060	15,223 U
9	0602232N Command, Control, and Communications Technology	1	18,536	16,000	21,734	-7,784	13,950 U
10	0602233N Mission Support Technology	1	33,745	28,000	30,595	-1,540	29,055 U
11	0602234N Systems Support Technology	1	60,256	56,000	71,325	-13,851	57,474 U
12	0602314N ASW Technology	1	85,219	92,569	94,276	-2,235	92,041 U
13	0602315N Mine and Special Warfare Technology	1	13,887	14,909	15,381		15,381 U
14	0602323N Submarine Technology	1	12,201	14,123	15,477	-963	14,514 U
15	0602324N Nuclear Propulsion	1	41,582	41,392	50,372	-5,949	44,423 U
16	0602435N Ocean and Atmospheric Support Technology	1	26,124	25,727	26,995	-124	26,871 U
17	0602936N Independent Exploratory Development	1	14,124	15,390	16,979	-1,175	15,804 U
Technology Base			785,121	749,967	894,426	-121,787	772,639
18	0603202N Avionics	2	3,344	3,675	3,708	-3,708	U

Page N-1 - 00

UNCLASSIFIED

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Line Element No	Program Element Number	Item Nomenclature	Act	Thousands of Dollars				
				FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 C
19	0603210N	Aircraft Propulsion	2	3,786	5,760	7,283	-125	7,158 U
20	0603217N	Advanced Aircraft Subsystems	2	5,324	11,555	21,709	-7,200	14,509 U
21	0603268N	Naval Airship	2	6,743	24,467	62,376	-62,376	U
22	0603270N	EW Technology	2		11,563		12,197	12,197 U
23	0603303N	Electromagnetic Radiation Source Elimination Technology	2	7,252	5,585	12,884	-6,832	6,052 U
24	0603508N	Ship Propulsion System	2	16,520	8,829	24,525	-9,683	14,842 U
25	0603573N	Electric Drive	2	9,168	14,171	14,264	-223	14,041 U
26	0603701N	Human Factors Engineering	2	2,425	2,533	4,912	-2,458	2,454 U
27	0603706N	Medical Development	2	11,167	19,127	18,743	-135	18,608 U
28	0603707N	Manpower and Personnel Systems	2	2,855	3,038	5,518	-1,542	3,976 U
29	0603712N	Generic Logistics R&D Technology Demonstrations	2	17,120	26,815	24,169	-4,304	19,865 U
30	0603720N	Education and Training	2	4,759	5,065	8,722	-2,569	6,153 U
31	0603732N	Marine Corps Advanced Manpower/Training Systems	2	2,306	1,861	5,149	-43	5,106 U
32	0603733N	Simulation and Training Devices	2	8,325	8,276	9,532	-3,081	6,451 U
33	0603739N	Navy Logistic Productivity	2		961	1,476	-12	1,464 U
34	0603743N	ARIADNE	2	4,836	10,826	11,844	-303	11,541 U
35	0603747N	Advanced Anti-Submarine Warfare Technology	2	23,657	22,273	2,458	-21	2,437 U
36	0603792N	Advanced Technology Transition	2	14,362	46,976	58,473	-1,303	57,170 U
Advanced Technology Development				143,949	233,356	297,745	-93,721	204,024

UNCLASSIFIED

Page N-2

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars				S
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED & FY 1989 C
37	0603311N ASW Technology for Strategic Defense	3			67,400	-67,400	U
38	0603451N Tactical Space Operations	3	12,068	1,992	5,859	-321	5,538 U
39	0603588N SSBN Survivability.	3	927	6,900	13,926	-4,194	9,732 U
40	0603735N WWMCCS Architecture Support	3			4,915	-41	4,874 U
41	0604363N TRIDENT II	3	1,573,323	1,050,463	581,740	-851	580,889 U
42	0605856N Strategic Technical Support	3	2,334	3,431	3,508	-268	3,240 U
43	0101221N Fleet Ballistic Missile System	3	18,392	27,898	54,470	-15,737	38,733 U
44	0101224N SSBN Security Technology Program	3	52,239	38,833	42,476	-574	41,902 U
45	0101228N Trident	3	33,685	30,921	43,938	-10,455	33,483 U
46	0101401N Extremely Low Frequency (ELF) Communications	3	14,967	3,221	3,342	-28	3,314 U
47	0101402N Navy Strategic Communications	3	89,788	79,160	65,799	-12,861	52,938 U
48	0102427N Naval Space Surveillance	3	1,195	678	711	-15	696 U
49	0303131N Minimum Essential Emergency Communications Network (MEECN)	3	1,637	1,026	1,054	-10	1,044 U
50	0303152N World-Wide Military Command and Control Systems, Information System	3	12,590	7,599	5,253	-625	4,628 U
Strategic Programs			1,813,145	1,252,122	894,391	-113,380	781,011
51	0603109N Integrated Aircraft Avionics	4	19,845	8,807	2,093	-26	2,067 U
52	0603206N Electronic Warfare Advanced Development	4	19,337		46,821	-46,821	U
53	0603207N Air/Ocean Tactical Applications	4	6,473	11,254	15,909	-8,134	7,775 U
54	0603208N T-45 Training System	4	134,163	94,579	87,822		87,822 U

Page N-3

UNCLASSIFIED

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
55	0603216N Aviation Life Support Systems (Adv)	4	3,623	3,545	8,683	-350	8,333 U
56	0603220N Advanced Multimission Sensor System	4			2,856	-2,856	U
57	0603222N Skipper Enhancements	4		9,004		1,190	1,190 U
58	0603228N CV ASW Module	4	3,059		5,175	-4,211	964 U
59	0603254N Air ASW	4	5,308	8,167	9,717	-757	8,960 U
60	0603256N V-22A	4			17,909	-17,909	U
61	0603257N A-6 Upgrades	4	161,015	215,023	78,097	-78,097	U
62	0603260N Airborne Mine Countermeasures	4	10,680	8,783	12,322	-174	12,148 U
63	0603261N Tactical Airborne Reconnaissance	4	22,094	8,387	8,631	-353	8,278 U
64	0603262N Aircraft Survivability and Vulnerability	4	13,208	9,641	18,569	-6,950	11,619 U
65	0603306N Advanced A/L Air-to-Surface Missile System	4	29,648	31,888	26,724	-4,143	22,581 U
66	0603318N Advanced Surface-to-Air Missile	4	33,745	63,612	102,183	-1,469	100,714 U
67	0603319N NATO AAW Systems	4		5,872	8,216	-148	8,068 U
68	0603320N Low Cost Anti-Radiation Seeker	4	37,946	14,057	16,870	-8,109	8,761 U
69	0603321N Advanced Air-to-Air Missile (AAAM)	4		16,637	87,592	-57,218	30,374 U
70	0603382N Battle Group AAW Coordination	4	6,663	7,829	11,665	-3,073	8,592 U
71	0603502N Surface Mine Countermeasures	4	17,591	15,012	11,876	-189	11,687 U
72	0603504N Advanced Submarine ASW Development	4	8,560	8,121	14,775	-2,385	12,390 U
73	0603506N Surface Ship Torpedo Defense	4	16,768	24,198	36,518	-1,307	35,211 U

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 C
74	0603509N Shipboard Information Transfer System	4			4,017	-4,017	U
75	0603512N Catapults	4		4,894	11,809	-3,812	7,997 U
76	0603513N Shipboard System Component Development	4	10,342	12,593	16,802	-5,881	10,921 U
77	0603514N Ship Combat Survivability	4	25,253	26,191	36,298	-7,997	28,301 U
78	0603522N Submarine Arctic Warfare Support Equipment Program	4	2,512	1,965	3,474	-101	3,373 U
79	0603525N PILOT FISH	4	71,841	74,459	59,851		59,851 U
80	0603527N RETRACT LARCH	4					
81	0603528N Non-Acoustic Anti-Submarine Warfare (ASW)	4	19,979	9,805	20,818	-5,104	15,714 U
82	0603529N Advanced ASW Target	4	11,763	9,590	11,529	-280	11,249 U
83	0603536N RETRACT JUNIPER	4	23,523	24,672	38,322	-600	37,722 U
84	0603542N Radiological Control	4	1,243	2,863	3,341	-102	3,239 U
85	0603550N LINK DOGWOOD	4	2,000				U
86	0603553N Surface ASW	4	19,068	46,240	31,100	41,650.	72,750 U
87	0603560N Submarine Hull Array Development (Adv)	4	10,953				U
88	0603562N Submarine Tactical Warfare Systems	4	5,597	5,872	9,410	-3,175	6,235 U
89	0603564N Ship Development	4	11,076	3,915	11,266	-380	10,886 U
90	0603565N Surface Ship Navigation System	4	350				U
91	0603569N Attack Submarine Development	4		123,211	24,028	-10,388	13,640 U
92	0603570N Advanced Nuclear Reactor Components and Systems Development	4	93,175	80,680	87,617	-2,617	85,000 U

UNCLASSIFIED

Page N-5

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
93	0603571N Physical Security	4	4,123	8,513	6,479	-134	6,345 U
94	0603576N CHALK EAGLE	4	75,628	89,451	99,631		99,631 U
95	0603577N Shipboard Laser Weapon	4			2,874	-2,874	U
96	0603578N A4W/A1G Nuclear Propulsion Plant	4	3,308				U
97	0603582N Combat System Integration	4	13,942	9,796	10,467	-147	10,320 U
98	0603591N Joint Advanced Systems	4	128,499	224,550	236,620		236,620 U
99	0603601N Mine Development	4	6,988	23,486	29,523	-8,491	21,032 U
100	0603602N CHALK PINE	4					
101	0603609N Conventional Munitions	4	27,147	20,462	36,902	-15,285	21,617 U
102	0603610N Advanced Warhead Development	4			7,686	-7,686	U
103	0603611M Marine Corps Assault Vehicles	4	14,214	11,945	13,497	-166	13,331 U
104	0603634N Tactical Nuclear Development	4	6,631	2,058	19,375	-8,970	10,405 U
105	0603635M Marine Corps Ground Combat/Support System	4	16,866	1,601	9,410	-2,752	6,658 U
106	0603654N Joint Service Explosive Ordnance Development	4	13,843	11,307	12,412	-579	11,833 U
107	0603702N Ocean Engineering Systems Development	4	1,374	1,471	1,901	-49	1,852 U
108	0603704N ASW Oceanography	4	10,419	8,588	10,120	-848	9,272 U
109	0603708N ASW Signal Processing	4	15,952	18,001	13,851	-315	13,536 U
110	0603709N Advanced Marine Biological System	4	5,145	5,491	6,286	-467	5,819 U
111	0603711N Fleet Tactical Development and Evaluation Program	4	4,289	4,697	6,127	-51	6,076 U

UNCLASSIFIED

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line Element No	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 C	S
112	0603713N Ocean Engineering Technology Developments	4	12,634	13,135	16,108	-1,952	14,156	U
113	0603717N Command and Control Systems	4	31,601			27,504	27,504	U
114	0603719N Container Off-Loading and Transfer System (COTS)	4	2,783	1,495				U
115	0603722N Naval Special Warfare	4	19,498		20,706	-20,706		U
116	0603724N Navy Energy Program	4	15,953	7,556	8,839	-266	8,573	U
117	0603725N Facilities Improvement	4	8,152	9,744	4,185	-148	4,037	U
118	0603726N Merchant Ship Naval Augmentation Program	4			3,530	-3,530		U
119	0603729M Marine Corps Combat Services Support	4	15,402	9,640	24,418	-8,932	15,486	U
120	0603734N CHALK CORAL	4	10,681	4,546	4,524		4,524	U
121	0603737N LINK HAZEL	4	17,043	4,000	6,800		6,800	U
122	0603740N LINK LAUREL	4	40,122	53,843	59,672		59,672	U
123	0603741N Satellite Laser Communications	4	17,470			5,269	5,269	U
124	0603744N LINK SPRUCE	4	67,743	281,855	311,707	-311,707		U
125	0603746N RETRACT MAPLE	4	48,465	72,028	50,897	30,800	81,697	U
126	0603748N LINK PLUMERIA	4		7,000	11,529	-500	11,029	U
127	0603750N CHALK WEED	4		1,324	10,014	-8,900	1,114	U
128	0603751N RETRACT ELM	4		39,041	41,039		41,039	U
129	0603752N CHALK POINSETTIA	4						
130	0603763N Warfare Systems Architecture and Engineering	4	5,829			11,225	11,225	U

Page N-7

UNCLASSIFIED

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line No	Element No	Item Nomenclature	Act	Thousands of Dollars					S e c	
				FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c		
131	0603764N	LINK EVERGREEN	4							
132	0603784N	Fixed Distributed System	4	27,250	64,588	112,039	-7,149	104,890	U	
133	0603785N	Anti-Submarine Warfare Environmental Acoustic Support	4	10,178	16,143	13,920	-195	13,725	U	
134	0603787N	Special Processes	4	41,485	40,423	38,173		38,173	U	
135	0604203N	Standard Avionics Development	4	9,944	7,230	17,445	-5,323	12,122	U	
136	0604211N	IFF System Development	4	20,820	20,033	33,866	-8,632	25,234	U	
137	0604212N	LAMPS	4	18,587	18,359	6,171	-115	6,056	U	
138	0604213N	Helicopter Development	4	8,900	13,080	12,595	-594	12,001	U	
139	0604214N	AV-8B Aircraft (Engineering)	4	41,812	36,655	11,404	27,752	39,156	U	
140	0604215N	Support Equipment	4	26,135	60,600	64,307	4,672	68,979	U	
141	0604217N	S-3 Weapon System Improvement	4	13,747					U	
142	0604219N	Airborne ASW Developments	4	1,228					U	
143	0604221N	P-3 Modernization Program	4	53,082	97,788	152,145	52,675	204,820	U	
144	0604224N	Airborne Electronic Warfare - Eng	4	31,713		37,384	-37,384		U	
145	0604226N	Airborne Self-Protective Jammer	4	9,692		6,324	-6,324		U	
146	0604229N	Carrier Inner Zone ASW Helicopter	4	6,175					U	
147	0604233N	Advanced Tactical Aircraft (ATA)	4							
148	0604252N	Aircraft Propulsion	4	27,500		1,999	-1,999		U	
149	0604255N	Electronic Warfare Simulator Development	4	38,215	33,846	43,401	-4,650	38,751	U	

UNCLASSIFIED

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED & FY 1989 C
150	0604260N C/MH-53E	4	3,627	9,593	9,228	-277	8,951 U
151	0604261N Acoustic Search Sensors	4	27,214	39,037	55,385	-12,229	43,156 U
152	0604262N V-22A	4	421,421	465,662	306,677		306,677 U
153	0604264N Aviation Life Support Systems (Eng)	4	20,712	19,340	18,905	-1,743	17,162 U
154	0604268N Aircraft Engine Component Improvement Program	4	36,153	35,086	37,267	-1,164	36,103 U
155	0604270N EW Development	4		182,887		189,814	189,814 U
156	0604301N MK 92 Fire Control System Upgrade	4	3,705	3,441	2,974	-28	2,946 U
157	0604303N AEGIS Area Air Defense	4	3,278	7,226	9,267	-113	9,154 U
158	0604307N AEGIS Combat System Engineering	4	113,206	104,150	46,162	13,304	59,466 U
159	0604308N LINK ASH	4	8,582				U
160	0604309N SEA LANCE	4	105,565	105,038	113,518	-63,518	50,000 U
161	0604314N Advanced Medium Range Air-to-Air Missile	4	4,892	24,467	13,960	-360	13,600 U
162	0604353N Vertical Launching System	4	12,639				U
163	0604354N Air-to-Air Missile Systems Engineering	4	23,326	19,573	23,954	-2,648	21,306 U
164	0604355N Vertical Launch ASROC	4	39,232	40,397	5,670	24,617	30,287 U
165	0604358N Close-In Weapon System (PHALANX)	4	6,282	5,055	11,416	-6,090	5,326 U
166	0604361N NATO SEA SPARROW	4	1,829	2,936	6,020	-50	5,970 U
167	0604366N Standard Missile Improvements	4	43,566	29,359	45,007	7,052	52,059 U
168	0604367N TOMAHAWK	4	60,540	45,000	46,699	-1,149	45,550 U

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
169	0604369N	4	22,789	12,622	10,047	-1,444	8,603 U
170	0604370N	4	15,404	17,886	14,388	-230	14,158 U
171	0604372N	4	39,668	19,573	13,196	-220	12,976 U
172	0604502N	4	3,610	3,276	4,476	-336	4,140 U
173	0604503N	4	48,702	33,564	37,084	-1,051	36,033 U
174	0604504N	4	10,272	13,702	19,663	-1,635	18,028 U
175	0604506N	4	4,920	8,414	8,702	-2,194	6,508 U
176	0604507N	4	95,809	64,753	29,367	-350	29,017 U
177	0604508N	4	7,293	6,851	10,702	-4,578	6,124 U
178	0604511N	4		978	21,916	-21,916	U
179	0604515N	4	17,302	14,680	15,728	-272	15,456 U
180	0604516N	4	6,423	7,607	6,445	-365	6,080 U
181	0604518N	4	30,709	9,987	30,822	-11,213	19,609 U
182	0604524N	4	288,768	317,849	392,584	-10,050	382,534 U
183	0604561N	4	240,523	210,000	195,080		195,080 U
184	0604562N	4	40,501	42,013	45,165	-1,248	43,917 U
185	0604563N	4	6,338	10,818	12,486	-400	12,086 U
186	0604567N	4	75,219	48,888	74,089	-15,422	58,667 U
187	0604573N	4	49,077		48,529	-48,529	U

UNCLASSIFIED

Page N-10

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line Element No	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 C	S
188	0604574N Standard Embedded Computer Resources	4	18,757	19,635	35,412	-22,219	13,193	U
189	0604575N AN/SQS-53C	4	23,927	11,114	8,418	-5,450	2,968	U
190	0604578N Link Birch	4	5,810	3,000	1,922		1,922	U
191	0604601N Mine Development	4	10,270	10,232	10,937	-548	10,389	U
192	0604602N Naval Gunnery Improvements	4	9,208	9,970	14,016	-6,147	7,869	U
193	0604603N Unguided Conventional Air-Launched Weapons	4	1,445	1,690	6,367	-4,348	2,019	U
194	0604604N Chemical Warfare Weapons	4	3,670					U
195	0604608N Surface Electro-Optic System	4	15,241	15,244	5,860	-86	5,774	U
196	0604609N Bomb Fuze Improvement	4	6,083	8,380	4,844	-3,254	1,590	U
197	0604610N MK 50 Torpedo	4	172,994	140,600	12,622	122,063	134,685	U
198	0604654N Joint Service Explosive Ordnance Development	4	5,081	5,316	5,379	-45	5,334	U
199	0604656H Marine Corps Assault Vehicles	4		20,555	15,267	4,758	20,025	U
200	0604657H Marine Corps Ground Combat/Supporting Arms Systems	4	2,924		4,939	-4,939		U
201	0604675N MK 48 ADCAP (Engineering)	4	55,656	21,700	30,300	-2,618	27,682	U
202	0604704N Anti-Submarine Warfare Oceanographic Equipment	4	1,127	1,122	1,245	-10	1,235	U
203	0604705N CHALK BANYAN	4	13,000	13,000	7,861	-7,861		U
204	0604707N Theatre Mission Planning Center	4	19,685	28,235	16,778	617	17,395	U
205	0604708N Initial Trainer Acquisition	4	62,311		70,507	-13,758	56,749	U
206	0604710N Navy Energy Program	4	8,052	4,305	4,929	-168	4,761	U

Page N-11

UNCLASSIFIED

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	FY 1987	FY 1988	Thousands of Dollars		
					FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
207 0604711N	Navy Command and Control Systems (NCCS) Ashore Nodes	4	42,140				U
208 0604713N	Surface ASW System Improvement	4			48,674	-48,674	U
209 0604714N	Air Warfare Training Devices	4			1,919	-1,919	U
210 0604715N	Surface Warfare Training Devices	4	22,392	16,829	22,441	-3,688	18,753 U
211 0604717M	Marine Corps Combat Services Support	4	4,705	22,859	22,599	-209	22,390 U
212 0604718M	Marine Corps Intelligence/Electronics Warfare System	4	2,119	11,064	1,093	-36	1,057 U
213 0604719M	Marine Corps Command/Control/Communications/ Systems	4	1,997	10,060	20,645	5,724	26,369 U
214 0604721N	Battle Group Passive Horizon Extension System Trainer	4			13,171	-13,171	U
215 0604725N	Regional Tactical Surveillance	4	34,895				U
216 0604761N	Intelligence	4	7,255	3,868	4,842	-172	4,670 U
217 0604763N	LINK CYPRESS	4					
218 0604771N	Medical Developments	4	2,423	3,469	3,075	-49	3,026 U
219 0604779N	Joint Interoperability of Tactical Command & Control Systems (JINTACCS)	4	3,433			265	265 U
220 0604780M	JINTACCS Marine Corps	4	2,555	1,864	1,878	-131	1,747 U
221 0605803N	Electromagnetic Spectrum Management	4	3,727	1,958	6,465	-4,420	2,045 U
222 0605853N	Management and Technical Support	4	10,741	6,581	14,157	-4,800	9,357 U
223 0605867N	C2 Surveillance/Reconnaissance Support	4	9,077	6,414	7,867	-66	7,801 U
224 0204134N	A-6 Squadrons	4	11,684	451	8,500	-7,051	1,449 U
225 0204136N	F/A-18 Squadrons	4	30,045	11,929	19,897	-6,737	13,160 U

UNCLASSIFIED

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED & FY 1989 C
226 0204152N	Early Warning Aircraft Squadrons	4	32,763	21,137	24,852	-1,748	23,104 U
227 0204161N	Aviation Support CVW	4	370	1,761	9,999	-9,999	U
228 0204163N	Fleet Telecommunications (Tactical)	4	25,194	5,872	1,405	1,128	2,533 U
229 0204311N	Undersea Surveillance Systems	4	35,049	29,924	43,412	-2,474	40,938 U
230 0204313N	Ship-Towed Array Surveillance Systems	4	5,552	6,093	4,447	-37	4,410 U
231 0204571N	Special Projects	4	7,014	9,786	7,465	-1,109	6,356 U
232 0204573N	Navy Cover and Deception Program	4	15,366		5,392	-5,392	U
233 0204575N	Electronic Warfare (EW) Readiness Support	4	2,352		6,168	-6,168	U
234 0204576N	Counter C3 Development	4	18,967		12,847	-12,847	U
235 0205601N	HARM Improvement	4	2,192	3,719			U
236 0205604N	Tactical Information System	4	38,017			115,535	115,535 U
237 0205620N	ASW Combat Systems Integration	4	14,638	14,022	14,931	-598	14,333 U
238 0205633N	Aircraft Equipment Reliability/Maintainability Program	4	1,720	1,988	458	-458	U
239 0205658N	Laboratory Fleet Support	4	6,857	5,372	5,877	-361	5,516 U
240 0205667N	F-14 Upgrade	4	263,174	168,000	143,904	8,000	151,904 U
241 0205670N	Tactical Intelligence Processing	4	2,301	2,036	2,155	-18	2,137 U
242 0205674N	Electronic Warfare Counter Response	4	50,054		26,523	-26,523	U
243 0205675N	Operational Reactor Development	4	18,310	27,749	39,587	-2,000	37,587 U
244 0206313M	Marine Corps Telecommunications	4	8,526	7,971	8,895	-456	8,439 U

Page N-13

UNCLASSIFIED

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line Element NO Number	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED & FY 1989 C
245 0206623M	Marine Corps Ground Combat/Supporting Arms Systems	4	59,366	33,981	44,136	-285	43,851 U
246 0206624M	Marine Corps Combat Services Support	4	2,026	3,422	2,559	-43	2,516 U
247 0206625M	Marine Corps Intelligence/Electronics Warfare Systems	4	20,005	9,786	32,725	-14,983	17,742 U
248 0206626M	Marine Corps Command/Control/Communications Systems	4	19,710	15,612	25,063	-6,004	19,059 U
249 0206627M	Marine Corps Technical Support Command and Control System	4	6,325				U
250 0207316N	TACIT RAINBOW	4		10,461	5,896	-49	5,847 U
251 0208010M	Joint Tactical Communications Program (TRI-TAC)	4	5,165	2,314	2,850	-153	2,697 U
252 1110011N	Force Enhancements-Active	4		19,334		19,731	19,731 U
Tactical Programs			5,173,554	5,663,053	6,207,442	-215,002	5,992,440
253 0603783N	Integrated Platform Communications Development	5	36,589			18,770	18,770 U
254 0604230N	Warfare Support System	5		29,957	35,786	-2,501	33,285 U
255 0604231N	Tactical Command System	5		24,866	29,728	-3,375	26,353 U
256 0604232N	Communication Support System	5		295,888	305,748	-305,748	U
257 0604514N	Navigation Systems	5	639		2,850	-2,850	U
258 0604577N	EHF SATCOM	5	42,856			29,297	29,297 U
259 0604777N	NAVSTAR GPS	5	63,414	52,792	75,578	-32,909	42,669 U
260 0605866N	Navy Command and Control Top Level Warfare Requirements	5		2,925	4,806	-1,270	3,536 U
261 0301303N	Field Operational Intelligence Office	5					
262 0301326N	PRAIRIE SCHOONER	5					

UNCLASSIFIED

Page N-14

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars					S AMENDED & FY 1989 C
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	FY 1989 C	
263	0301327N Technical Reconnaissance and Surveillance	5						
264	0303109N Satellite Communications	5	9,752			21,471		21,471 U
265	0303401N Communications Security (COMSEC)	5						
266	0303603N Milstar Satellite Communications System	5	3,511	4,583	4,800	-63		4,737 U
267	0304111N Special Activities	5						
	Intelligence and Communications		625,769	913,856	977,239	-225,526		751,713
268	0603721N Environmental Protection	6	7,682	8,693	7,403	-1,589		5,814 U
269	0603790N NATO Research and Development	6	29,985					U
270	0604208N Range Instrumentation Systems Development (RISD)	6	11,565	8,586	7,529	-491		7,038 U
271	0604218N Air/Ocean Equipment Engineering	6	5,661	2,110	2,904	-793		2,111 U
272	0604258N Target Systems Development	6	87,780	73,127	103,201	-9,227		93,974 U
273	0604703N Personnel, Training, Simulation, and Human Factors	6	3,946	978	3,980	-2,955		1,025 U
274	0605151M Studies and Analysis Support - MC	6	2,390	1,888	2,101	-188		1,913 U
275	0605152N Studies and Analysis Support - Navy	6	5,288	3,337	5,896	-2,286		3,610 U
276	0605153H Marine Corps Operations Analysis Group, CNA	6	4,078	4,359	4,517	-1		4,516 U
277	0605154N Center for Naval Analyses	6	19,870	19,456	21,532	-3,769		17,763 U
278	0605155N Fleet Tactical Development and Evaluation	6	13,670	12,233	16,484	-2,622		13,862 U
279	0605156M Marine Corps Operational Test and Evaluation	6	1,396	1,283	1,490	-190		1,300 U
280	0605502N Small Business Innovative Research	6	57,321					U

Page N-15

UNCLASSIFIED

UNCLASSIFIED

Department of the Navy
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 1319 N Research Development Test & Eval Navy

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars					S AMENDED e FY 1989 C
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	FY 1989 e FY 1989 C	
281 0605804N	Technical Information Services	6	2,524	2,640	3,362	-763	2,599 U	
282 0605854M	Marine Corps Development Center Support	6	4,039	4,691	13,484	-8,238	5,246 U	
283 0605857N	International RDT&E	6	957	1,254	3,974	-281	3,693 U	
284 0605861N	RDT&E Laboratory and Facilities Management Support	6	49,673	53,645	55,529	-3,778	51,751 U	
285 0605862N	RDT&E Instrumentation and Material Support	6	20,579	41,494	30,241	-326	29,915 U	
286 0605863N	RDT&E Ship and Aircraft Support	6	73,795	90,726	94,171	-7,611	86,560 U	
287 0605864N	Test and Evaluation Support	6	296,864	310,000	336,526	-11,161	325,365 U	
288 0605865N	Operational Test and Evaluation Capability	6	7,310	8,720	8,791	-200	8,591 U	
289 0605871M	Marine Corps Tactical Exploitation of National Capabilities	6	3,180	958	1,080	-111	969 U	
290 0605872N	Productivity Investments	6		3,213	263	-2	261 U	
291 0305111N	Weather Service	6	690	948	886	-7	879 U	
292 0305160N	Defense Meteorological Satellite Program (DMSP)	6	2,691	3,893	2,280	-144	2,136 U	
293 0708011N	Industrial Preparedness	6	37,961	42,331	45,952	-2,470	43,482 U	
	Defensewide Mission Support		750,895	700,563	773,576	-59,203	714,373	
	Total Research Development Test & Eval Navy		9,292,433	9,512,917	10,044,819	-828,619	9,216,200	

UNCLASSIFIED

Page N-16

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Summary

Date: February 1988

Thousands of Dollars

	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AWENDED FY 1989
Summary Recap of Research Categories					
Research					
Exploratory Development	221,085	198,401	245,522	-45,855	199,667
Advanced Development	562,046	556,970	630,711	-47,846	582,865
Engineering Development	3,549,703	4,263,525	4,421,922	-1,923,994	2,497,928
Management and Support	3,566,796	3,969,553	6,785,683	-1,425,218	5,360,465
	1,037,023	548,840	597,916	-30,673	567,243
Research and Development (FYDP Program 6)					
Operational Systems Development	8,936,653	9,537,289	12,681,754	-3,473,586	9,208,168
	6,113,870	5,628,099	5,046,817	677,115	5,723,932
Total Research Development Test & Eval AF	15,050,523	15,165,388	17,728,571	-2,796,471	14,932,100

Summary Recap of Budget Activities

Technology Base					
Advanced Technology Development	783,131	755,371	876,233	-93,701	782,532
Strategic Programs	687,487	754,813	986,771	-202,546	784,225
Tactical Programs	5,592,700	5,886,847	8,137,069	-2,778,183	5,358,886
Intelligence and Communications	3,631,177	4,031,360	4,210,694	55,158	4,265,852
Defensewide Mission Support	2,293,434	2,132,074	2,024,634	863	2,025,497
	2,062,594	1,604,923	1,493,170	221,938	1,715,108
Total Research Development Test & Eval AF	15,050,523	15,165,388	17,728,571	-2,796,471	14,932,100

Summary Recap of FYDP Programs

Strategic Forces					
General Purpose Forces	737,160	564,401	545,496	-76,672	468,824
Intelligence and Communications	1,132,070	943,700	836,349	210,854	1,047,203
Airlift/Sealift	4,023,811	3,809,462	3,329,212	503,713	3,832,925
Guard and Reserve	97,017	26,922	128,397	-115,463	12,934
Research and Development (FYDP Program 6)	37,318	59,965	83,367	-79	83,288
Central Supply and Maintenance	8,936,653	9,537,289	12,681,754	-3,473,586	9,208,168
Training Medical and Other	79,349	103,705	120,840	-1,082	119,758
Support of Other Nations	4,424				
Special Operations Forces	2,721	3,107	3,156	581	3,737
		116,837		155,263	155,263
Total Research Development Test & Eval AF	15,050,523	15,165,388	17,728,571	-2,796,471	14,932,100

UNCLASSIFIED

Page F-I

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c	S
1	0601101F In-House Laboratory Independent Research	1	14,998	15,653	16,733	-6,510	10,223	U
2	0601102F Defense Research Sciences	1	197,619	182,748	204,196	-14,752	189,444	U
3	0601103F University Research Initiatives	1	8,468		24,593	-24,593		U
4	0602101F Geophysics	1	37,552	35,832	42,436	-7,598	34,838	U
5	0602102F Materials	1	54,290	54,856	63,064	-4,697	58,367	U
6	0602201F Aerospace Flight Dynamics	1	70,861	67,698	72,059	-2,790	69,269	U
7	0602202F Human Systems Technology	1	47,460	48,946	54,996	-5,195	49,801	U
8	0602203F Aerospace Propulsion	1	59,159	61,813	69,733	-5,202	64,531	U
9	0602204F Aerospace Avionics	1	61,822	59,773	73,073	-6,606	66,467	U
10	0602205F Personnel, Training and Simulation	1	23,518	31,916	36,810	-5,784	31,026	U
11	0602206F Civil Engineering and Environmental Quality	1	6,345	6,640	6,046	-505	5,541	U
12	0602302F Rocket Propulsion	1	37,972	38,423	44,283	-5,131	39,152	U
13	0602601F Advanced Weapons	1	37,990	34,846	37,304	-2,619	34,685	U
14	0602602F Conventional Munitions	1	39,301	40,587	46,846	-2,839	44,007	U
15	0602702F Command Control and Communications	1	77,695	75,640	84,061	1,120	85,181	U
16	0602703F Personnel Utilization Technology	1	8,081					U
Technology Base								
17	0603106F Logistics Systems Technology	2	783,131	755,371	876,233	-93,701	782,532	
18	0603109F INEWS/ICNIA	2	11,477	9,574	19,645	-3,209	16,436	U
			102,453	85,300	40,958	-3,535	37,423	U

Page F-1 - O

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED & FY 1989 C
19	0603202F Aerospace Propulsion Subsystems Integration	2	25,210	20,000	27,825	-6,726	21,099 U
20	0603203F Advanced Avionics for Aerospace Vehicles	2	39,515	10,030	41,643	-11,529	30,114 U
21	0603205F Aerospace Vehicle Technology	2	20,937	20,602	28,260	-6,821	21,439 U
22	0603208F Advanced Electronics for Aerospace Vehicles (H)	2	5,604				U
23	0603211F Aerospace Structure and Materials	2	27,312	26,000	33,348	-5,427	27,921 U
24	0603215F Aerospace Fuels and Propulsion Technology (H)	2	2,723				U
25	0603216F Aerospace Propulsion and Power Technology	2	23,694	26,999	37,823	-5,157	32,666 U
26	0603217F Weapon Systems Power	2	2,196				U
27	0603226F DoD Common Programming Language (Ada) Advanced Develop	2	6,685	15,673	20,552	-20,552	U
28	0603227F Personnel, Training and Simulation Technology	2	4,072	8,481	12,743	-4,705	8,038 U
29	0603231F Crew Systems and Personnel Protection Technology	2	16,594	18,242	24,780	-2,521	22,259 U
30	0603245F Advanced Fighter Technology Integration	2	28,859	22,352	32,904	-8,924	23,980 U
31	0603248F Concept Development	2	4,957		6,259	-6,259	U
32	0603250F Lincoln Laboratory	2	26,500	22,000	26,655	-1,523	25,132 U
33	0603253F Advanced Avionics Integration	2	5,555	2,992	15,042	-1,014	14,028 U
34	0603259F Cartographic Application for Tactical and Strategic Systems (H)	2	1,632				U
35	0603269F National Aero Space Plane Technology Program	2		183,000	306,288	-61,521	244,767 U
36	0603270F EW Technology	2				35,667	35,667 U
37	0603302F Space and Missile Rocket Propulsion	2	5,604	6,259	12,208	-3,213	8,995 U

UNCLASSIFIED

Page F-2

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line Element No Number		Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e, FY 1989 c	S, FY 1989 c
Thousands of Dollars									
38	0603363F	Hypervelocity Missile	2	9,273	10,626	7,783	-1,206	6,577	U
39	0603401F	Advanced Spacecraft Technology	2	12,932	4,000	10,103	-2,108	7,995	U
40	0603410F	Space Systems Environmental Interactions Technology	2	3,491	3,825	3,934	-4	3,930	U
41	0603452F	Very High Speed Integrated Circuits	2	126,426	100,000	58,127	-14,041	44,086	U
42	0603601F	Conventional Weapons	2	27,984	11,552	31,519	-6,218	25,301	U
43	0603605F	Advanced Weapons Technology	2	39,088	71,650	34,766	39,728	74,494	U
44	0603704F	Manpower and Personnel Systems Technology (H)	2	1,442					U
45	0603707F	Weather Systems - Adv Dev	2	4,047	5,276	5,838	-504	5,334	U
46	0603723F	Civil and Environmental Engineering Technology	2	7,803	11,827	11,324	-2,310	9,014	U
47	0603726F	C3I Subsystem Integration	2	2,714	5,220	9,634	-1,608	8,026	U
48	0603727F	Advanced Communications Technology (H)	2	4,956					U
49	0603728F	Advanced Computer Technology	2	6,980	4,128	12,249	-2,010	10,239	U
50	0603743F	Electronic Combat Technology	2	38,443		47,600	-47,600		U
51	0603745F	Chemical Warfare Defense (H)	2	4,946					U
52	0603750F	Counter-Countermeasures (CCM) (H)	2	5,917					U
53	0603751F	Training Systems Technology	2	1,823	276	471	-1	470	U
54	0603752F	DoD Software Engineering Institute	2	14,195	18,929	18,794	-18,794		U
55	0603789F	C3I Technology Development	2	13,448	30,000	47,696	-28,901	18,795	U
Advanced Technology Development				687,487	754,813	986,771	-202,546	784,225	

UNCLASSIFIED

Page F-3

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	Thousands of Dollars				S AMENDED & FY 1989 C
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	
56 0603110F	Special Evaluation Program	3					
57 0603111F	Meridian	3					
58 0603265F	Long Range Conventional Cruise Missile	3				50,000	50,000 U
59 0603311F	Advanced Strategic Missile Systems	3	149,997	133,640	151,979	-143	151,836 U
60 0603312F	Advanced Concepts	3					
61 0603364F	Short Range Attack Missile II (SRAM II)	3	65,547	174,320	231,589	-122	231,467 U
62 0603367F	Relocatable Target Capability Program	3	4,494	9,961	23,723	-4,018	19,705 U
63 0603368F	Air Defense Battle Management Technology	3	4,198		35,820	-35,820	U
64 0603369F	Cruise Missile Engagement Systems Technology	3	503		35,035	-35,035	U
65 0603424F	Cruise Missile Surveillance Technology	3	14,843				U
66 0603716F	Atmospheric Surveillance Technology	3	16,014		1,604	-1,604	U
67 0603717F	Technical On-site Inspection Program	3	10,452	10,627	3,813	5,478	9,291 U
68 0603735F	WWMCCS Architecture	3	5,859		289	-289	U
69 0603738F	ADI Surveillance Technology	3			138,900	-138,900	U
70 0604216F	WWMCCS System Replacement	3			13,796	-13,796	U
71 0604226F	B-1B	3	115,728	366,841	386,726	-165,135	221,591 U
72 0604234F	Common Strategic Rotary Launcher	3	12,303	5,693	947	-1	946 U
73 0604240F	B-2 Advanced Technology Bomber	3					
74 0604312F	ICBM Modernization	3	1,143,499	1,068,268	3,461,672	-2,428,781	1,032,891 U

UNCLASSIFIED

Page F-4

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
75 0604326F	Strategic Conventional Standoff Capability (SCSC)	3	28,188	7,969		10,000	10,000 U
76 0604361F	Air Launched Cruise Missile (ALCM)	3	4,719	3,577	958	-1	957 U
77 0604406F	Space Defense System	3	169,211	131,852	385,812	-385,812	U
78 0604711F	Systems Survivability (Nuclear Effects)	3	12,793	12,926	11,340	-3,007	8,333 U
79 0101120F	Advanced Cruise Missile	3					
80 0101135F	Aircraft Survivability Enhancements	3					
81 0101142F	KC-135 Squadrons	3	421	4,019	4,179	-1,003	3,176 U
82 0101213F	Minuteman Squadrons	3	52,439	84,295	199,615	-138,546	61,069 U
83 0101312F	PACCS and WWABNCP System EC-135 Class V Mods	3	13,715	939	1,203	7	1,210 U
84 0101313F	War Planning Automated Data Processing (ADP) - SAC	3		20,321		20,298	20,298 U
85 0101316F	SAC Communications	3	1,513				U
86 0102310F	NCMC - TW/AA Systems	3	34,923	57,624	52,582	18,034	70,616 U
87 0102311F	NCMC - Space Defense Systems	3	42,882	23,410	24,004	-1,022	22,982 U
88 0102313F	Ballistic Missile Tactical Warning/Attack Assessment System	3	2,874	2,256	2,536	-3	2,533 U
89 0102325F	Joint Surveillance System	3	3,234	2,147	1,754	-3	1,751 U
90 0102411F	Surveillance Radar Stations/Sites	3	15,917	5,204	1,671	-4	1,667 U
91 0102412F	Distant Early Warning (DEW) Radar Stations	3	11,721	8,444			U
92 0102417F	Over-the-Horizon Backscatter Radar	3	29,895	31,326	19,218	-17	19,201 U
93 0102423F	Ballistic Missile Early Warning System (BMEWS)	3	15,338	19,172	27,007	-1,645	25,362 U

Page F-5

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line Element No Number		Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
Thousands of Dollars								
94	0102424F	SPACETRACK	3	14,319	7,600	10,966	-1,609	9,357 U
95	0102431F	Defense Support Program	3	112,399	88,462	95,214	-11,082	84,132 U
96	0102432F	Submarine-Launched Ballistic Missile (SLBM) Radar Warning System	3	13,727	17,246	10,175	-10	10,165 U
97	0102433F	NUDET Detection System	3	23,212	7,369	10,932	-10	10,922 U
98	0102436F	Command Center Processing and Display System	3	21,442	29,437	38,064	-11,125	26,939 U
99	0102822F	LEO	3					
100	0303131F	Minimum Essential Emergency Communications Network (MEECN)	3	56,619	50,402	34,231	6,802	41,033 U
101	0303152F	World-Wide Military Command and Control Systems, Information System	3	6,591	5,087	5,319	-3,002	2,317 U
102	0303154F	WWMCCS Information System Joint Program Management Office	3	94,928	21,406	91,425	-25,062	66,363 U
103	0303601F	Milstar Satellite Communications System (AF Terminals)	3	258,562	198,226	310,353	-6	310,347 U
104	0303603F	Milstar Satellite Communications System	3	473,205				
105	0305124F	Special Applications Program	3					
106	0305172F	BERNIE	3					
107	0305892F	Special Analysis Activities	3					
108	0401123F	Military Airlift Group (IF)	3	8,664	9,952	192	1	193 U
Strategic Programs				5,592,700	5,886,847	8,137,069	-2,778,183	5,358,886
109	0603107F	Technical Evaluation System	4					
110	0603230F	Advanced Tactical Fighter	4	261,342	498,054	702,995	-712	702,283 U
111	0603239F	Unmanned Air Reconnaissance System (UARS)	4	3,787		8,831	-8,831	U

UNCLASSIFIED

Page F-6

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	Thousands of Dollars				S AMENDED e FY 1989 C
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	
112 0603244F	Aircraft Non-Nuclear Survivability (H)	4	2,374				U
113 0603256F	CV-22A	4	3,145		25,584	-25,584	U
114 0603260F	Intelligence Advanced Development	4	4,867	4,058	5,796	-802	4,994 U
115 0603261F	PAVE RUNNER Advanced Development	4					
116 0603307F	Air Base Operability Advanced Development	4	5,750	2,988	5,132	-4	5,128 U
117 0603320F	Low Cost Anti-Radiation Seeker	4	16,795	13,533	12,465	-12	12,453 U
118 0603437F	HAVE DJINN	4					
119 0603609F	Millimeter Wave Seekers	4	4,744				U
120 0603714F	DoD Physical Security Equipment - Exterior	4	950	908	937	-1	936 U
121 0603742F	Combat Identification Technology	4	5,948		1,951	-2	1,949 U
122 0603749F	C3CM Advanced Systems	4	4,974		1,872	-1,872	U
123 0603801F	Special Programs	4					
124 0604201F	Aircraft Avionics Equipment Development	4	23,169	16,934	22,648	-3,018	19,630 U
125 0604212F	Aircraft Equipment Development	4	4,636	1,931	2,139	-1,001	1,138 U
126 0604218F	Engine Model Derivative Program (EMDP)	4	61,025	979	982	-25	957 U
127 0604219F	Integrated Digital Avionics	4	9,189		653	-653	U
128 0604220F	EW Counter Response	4	30,499		2,634	-2,634	U
129 0604222F	Nuclear Weapons Support	4	4,224	4,427	2,179	-2	2,177 U
130 0604223F	Alternate Fighter Engine	4	102,171	76,616	28,078	-26	28,052 U

Page F-7

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED & FY 1989 C
131	0604231F C-17 Program	4	615,716	1,115,550	981,977	-20,910	961,067 U
132	0604232F PAVE RUNNER	4					
133	0604233F Tanker, Transport, Bomber Training System	4				4,500	4,500 U
134	0604236F Infrared Search and Track System	4	24,303	14,000	4,876	-4	4,872 U
135	0604237F Variable Stability In-Flight Simulator Test Aircraft	4	5,816	6,225	14,380	-2,511	11,869 U
136	0604241F Consolidated EW Program	4		179,043			U
137	0604242F Advanced Tactical Aircraft (ATA)	4					
138	0604247F Modular Automatic Test Equipment	4	18,159	14,942	16,302	-3,013	13,289 U
139	0604248F Modular Standoff Weapons	4			39,255	-39,255	U
140	0604249F Night/Precision Attack	4	37,942	19,774	4,689	-5	4,684 U
141	0604250F Integrated EW/CNI Development	4		7,684	36,081	52,214	88,295 U
142	0604268F Aircraft Engine Component Improvement Program	4	110,278	90,658	128,737	-34,227	94,510 U
143	0604270F EW Development	4				127,178	127,178 U
144	0604313F T-46A	4	531				U
145	0604314F Advanced Medium-Range, Air-to-Air Missile (AMRAAM)	4	36,726	23,906			U
146	0604315F Advanced Short Range Air-to-Air Missile (ASRAAM)	4		996	9,576	-5,405	4,171 U
147	0604321F Joint Tactical Fusion Program	4	24,636	13,802			
148	0604327F Hardened Target Munitions	4		1,494	14,085	-7,806	6,279 U
149	0604362F Ground-Launched Cruise Missile (GLCM)	4			958	-958	U

UNCLASSIFIED

Page F-8

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars				S
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
150 0604601F	Chemical/Biological Defense Equipment	4	21,653	14,543	17,678	-17	17,661 U
151 0604602F	Armanent/Ordnance Development	4	19,582	13,800	19,176	-18	19,158 U
152 0604604F	Submunitions	4	4,712	4,650	7,333	-7	7,326 U
153 0604607F	Wide-Area, Anti-Armor Munitions	4	23,328	22,520	13,278	13,474	26,752 U
154 0604617F	Air Base Operability	4	16,324	11,953	17,034	-16	17,018 U
155 0604703F	Aeromedical Systems Development	4	6,874	6,704	8,103	-2,006	6,097 U
156 0604704F	Common Support Equipment Development	4		1,639	2,237	-602	1,635 U
157 0604706F	Life Support Systems	4	14,702	12,568	15,730	1,184	16,914 U
158 0604708F	Other Operational Equipment	4	12,947	7,635	6,748	-704	6,044 U
159 0604710F	Reconnaissance Equipment	4	9,212	194	203	-203	U
160 0604715F	DoD Physical Security Equipment - Exterior	4	16,464	11,288	5,148	-4	5,144 U
161 0604724F	Tactical C3 Countermeasures	4	19,043		8,915	-8,915	U
162 0604725F	Combat Identification Systems	4	8,848	34,864	127,599	-20,403	107,196 U
163 0604733F	Surface Defense Suppression	4	27,268	9,961	28,137	11,650	39,787 U
164 0604737F	Airborne Self-Protection Jammer	4	11,967		8,047	-8,047	U
165 0604738F	Protective Systems	4	57,714	32,738	81,974	-81,974	U
166 0604739F	Tactical Protective Systems	4	40,200		55,994	-55,994	U
167 0604740F	Computer Resources Management Technology	4	14,261	9,961	21,667	-8,511	13,156 U
168 0604742F	Precision Location Strike System	4	23,729				U

Page F-9

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line No	Element No	Item Nomenclature	Act	Thousands of Dollars				FY 1989 ADJUSTMENT	AMENDED & FY 1989 C
				FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989			
169	0604750F	Intelligence Equipment	4	12,162	5,905	4,880	-5	4,875 U	
170	0604754F	Joint Tactical Information Distribution System (JTIDS)	4		21,914	64,772	-62	64,710 U	
171	0604756F	Side Looking Airborne Radar	4	21,904		5,254	-1,604	3,650 U	
172	0604770F	Joint Surveillance/Target Attack Radar System (JSTARS)	4	297,248	346,559	238,296	-226	238,070 U	
173	0604779F	Joint Interoperability of Tactical Command & Control Systems (JINTACCS)	4	9,331	6,017	6,085	-6	6,079 U	
174	0101133F	SR-71 Squadrons	4						
175	0201131F	U.S. Readiness Command - Communications	4		3,999	1,276	-1,276		U
176	0207129F	F-111 Squadrons	4	15,790	18,926	20,136	1,405	21,541 U	
177	0207130F	F-15A/B/C/D Squadrons	4	153,347	105,588	69,340	19,716	89,056 U	
178	0207133F	F-16 Squadrons	4	53,651	25,401	23,640	2,821	26,461 U	
179	0207136F	F-4G WILD WEASEL Squadrons	4	25,812	15,739	17,001	4,286	21,287 U	
180	0207137F	CONSTANT HELP	4						
181	0207139F	Competitive Fighter Procurement	4			2,846	-2,846		U
182	0207162F	Tactical AGM Missiles	4	1,457	2,339				U
183	0207168F	F-111 Self Protection Systems	4		19,125	52,869	-52,869		U
184	0207169F	SEEK CLOCK	4						
185	0207215F	TR-1 Squadron	4	20,453	69,728	102,307	-99	102,208 U	
186	0207217F	Follow-On Tactical Reconnaissance System	4	17,672	42,833	54,084	2,478	56,562 U	
187	0207247F	AF TENCAP	4	2,859	312	324	-1	323 U	

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
188 0207316F	TACIT RAINBOW	4		79,150	48,360	-9,037	39,323 U
189 0207411F	Overseas Air Weapon Control System	4	6,305	6,920	6,075	-6	6,069 U
190 0207412F	Tactical Air Control Systems	4	15,546	17,930	14,370	-1,014	13,356 U
191 0207417F	Airborne Warning and Control System (AWACS)	4	99,092	94,630	88,419	86,355	174,774 U
192 0207423F	Advanced Communications Systems	4	29,900	29,883	11,089	-283	10,806 U
193 0207424F	Copper Coast	4					
194 0207431F	Tactical Air Intelligence System Activities	4	1,321	1,943			U
195 0207433F	Tactical Improvement Program	4					
196 0207435F	Tactical Reconnaissance Imagery and Exploitation	4	803	1,138	1,534	-2	1,532 U
197 0207579F	Advanced Systems Improvements	4					
198 0207582F	Have Trump	4					
199 0207584F	SEEK AXLE	4					
200 0207585F	SEEK SPINNER	4					
201 0207591F	OMEGA	4					
202 0207595F	Base Communications - Tactical Air Forces	4	3,586				U
203 0208010F	Joint Tactical Communications Program (TRI-TAC)	4	6,975	9,961	8,102	-3,804	4,298 U
204 0208042F	HAVE FLAG	4					
205 0303605F	Satellite Communications Terminals	4	4,461	13,946	22,760	-4,766	17,994 U
206 0305165F	NAVSTAR Global Positioning System (Space and Control Segments)	4	3,100				U

Page F-11

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
207	0305887F Electronic Combat Intelligence Support	4	1,691		1,682	-1,682	U
208	0401129F THEME CASTLE	4					
209	0401316F Senior Citizen	4					
210	0401840F MAC Command and Control System	4	11,594	7,969	11,015	-2,000	9,015 U
211	0404011F Special Operations Forces	4	63,277		113,461	-113,461	U
212	0502610F A-7 Squadrons (ANG)	4	37,318	59,965	83,367	-79	83,288 U
213	1110011F Force Enhancements-Active	4		116,837		155,263	155,263 U
Tactical Programs			3,631,177	4,031,360	4,210,694	55,158	4,265,852
214	0603431F Space Communications	5	13,690				U
215	0604238F Constant Pisces	5					
216	0301305F Intelligence Production Activities	5					
217	0301310F Foreign Technology Division	5					
218	0301314F Infrared/Electro-Optical/Dir. Energy Weapons Processing and Exploitation	5					
219	0301315F Missile and Space Technical Collection	5					
220	0301317F SENIOR YEAR Operations	5					
221	0301324F FOREST GREEN	5					
222	0301357F NUDET Detection System	5					
223	0302053F NMCS-Wide Support - Communications	5	967				U
224	0303110F Defense Satellite Communications System	5	16,833	43,325	53,596	-15,535	38,061 U

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line Element No Number		Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c	S
Thousands of Dollars									
225	0303126F	Long-Haul Communications (DCS)	5	7,053	5,132	4,756	-5	4,751	U
226	0303128F	Inter-Service/Agency Automated Message Processing Exchange	5	51,883	1,289	13,240	-13,240		U
227	0303144F	Electromagnetic Compatibility Analysis Center (ECAC)	5	7,485	8,083	8,618	-191	8,427	U
228	0303401F	Communications Security (COMSEC)	5						
229	0304111F	Special Activities	5						
230	0305114F	Traffic Control, Approach, and Landing System (TRACALS)	5	21,407	25,891	25,139	-25	25,114	U
231	0305159F	Defense Reconnaissance Support Activities	5						
232	0305164F	NAVSTAR Global Positioning System (User Equipment)	5	28,172	40,239	61,697	-11,547	50,150	U
233	0305165F	NAVSTAR Global Positioning System (Space and Control Segments)	5	32,817	26,204	61,257	-8,025	53,232	U
234	0804733F	General Intelligence Skill Training	5	4,424					U
Intelligence and Communications									
235	0603402F	Space Test Program	6	2,293,434	2,132,074	2,024,634	863	2,025,497	
236	0603438F	Satellite Systems Survivability	6	49,093	53,887	130,664	-57,868	72,796	U
237	0603790F	NATO Research and Development	6	1,886	3,264	3,787	-3	3,784	U
238	0604211F	Advanced Aerial Target Development	6	36,488					U
239	0604227F	Flight Simulator Development	6	10,671	9,848	3,714	-3	3,711	U
240	0604609F	R&M Maturation/Technology Insertion	6	92,783	56,778	64,467	8,333	72,800	U
241	0604707F	Weather Systems - Eng Dev	6	13,821	14,942	26,279	-5,519	20,760	U
242	0604735F	Range Improvement	6	12,170	12,488	11,769	-3,008	8,761	U
			6	58,965	55,782	46,603	-6,538	40,065	U

Page F-13

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
243	0604747F Electromagnetic Radiation Test Facilities	6	5,399	5,919	6,238	-1,005	5,233 U
244	0604755F Improved Capability for Development Test & Evaluation	6	76,727	52,296	71,257	-20,549	50,708 U
245	0605101F Project Air Force	6	20,299	22,020	20,011	1,981	21,992 U
246	0605304F Acquisition & Command Support (ACS) - Telecommunications	6	12,727				U
247	0605306F Ranch Hand II Epidemiology Study	6	7,147	5,754	1,757	-10	1,747 U
248	0605502F Small Business Innovative Research	6	73,404				U
249	0605708F Navigation/Radar/Sled Track Test Support	6	25,293	24,122	24,959	-4,414	20,545 U
250	0605806F Acquisition and Command Support	6	294,296				U
251	0605807F Test and Evaluation Support	6	302,302	295,106	316,669	-18,582	298,087 U
252	0605808F Advanced Systems Engineering/Planning	6	12,637	13,093	27,445	-13,014	14,431 U
253	0605809F DYCONS	6		7,471	9,224	-33	9,191 U
254	0605863F RDTE Aircraft Support	6	62,000	50,000	60,862	-3,036	57,826 U
255	0605872F Productivity Investments	6	2,871				U
256	0605874F Product Performance Agreement Center	6	606				U
257	0605894F Real Property Maintenance - RDTE	6	124,019	74,465	80,843	1,038	81,881 U
258	0605896F Base Operations - RDTE	6	99,422	56,809	56,146	5,397	61,543 U
259	0305110F Satellite Control Facility	6	75,913	95,458	126,898	-26,095	100,803 U
260	0305119F Space Boosters	6	290,552	454,865	15,847	472,938	488,785 U
261	0305130F Consolidated Space Operations Center	6	68,559	39,864	39,126	4,959	44,085 U

UNCLASSIFIED

UNCLASSIFIED

Department of the Air Force
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 3600 F Research Development Test & Eval AF

Date: February 1988

Program Line Element No	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c	S
								Thousands of Dollars
262	0305160F Defense Meteorological Satellite Program (DMSP)	6	59,556	42,675	68,539	-15,175	53,364	U
263	0305171F Space Shuttle Operations	6	90,918	51,205	156,070	-97,355	58,715	U
264	0701112F Inventory Control Point Operations	6	4,628	4,329	4,480	-4	4,476	U
265	0702207F Depot Maintenance (Non-IF)	6			974	-1	973	U
266	0708011F Industrial Preparedness	6	60,458	84,670	94,973	2,938	97,911	U
267	0708026F Productivity, Reliability, Availability, Maintain. Prog Ofc (PRAMPO)	6	14,263	14,706	20,413	-4,015	16,398	U
268	1001004F International Activities	6	2,721	3,107	3,156	581	3,737	U
Defensewide Mission Support								
			2,062,594	1,604,923	1,493,170	221,938	1,715,108	
Total Research Development Test & Eval AF			15,050,523	15,165,388	17,728,571	-2,796,471	14,932,100	

UNCLASSIFIED

Page F-15

UNCLASSIFIED
Defense Agencies
FY 1989 R D T & E Program

Exhibit R-1

Summary

Date: February 1988

Thousands of Dollars

Summary Recap of Research Categories

	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED FY 1989
Research					
Exploratory Development	99,903	192,050	125,367	61,195	186,562
Advanced Development	712,131	878,463	896,997	-113,338	783,659
Engineering Development	3,841,372	4,422,977	6,886,078	-1,241,630	5,644,448
Management and Support	196,683	117,385	73,385	5,971	79,356
	131,224	158,285	181,470	-34,854	146,616
Research and Development (FYDP Program 6)					
Operational Systems Development	4,981,313	5,769,160	8,163,297	-1,322,656	6,840,641
	1,786,797	1,892,665	1,957,367	-130,208	1,827,159
Total Research Development Test & Eval Def Ag	6,768,110	7,661,825	10,120,664	-1,452,864	8,667,800

Summary Recap of Budget Activities

	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED FY 1989
Technology Base					
Advanced Technology Development	812,034	1,070,513	1,022,364	-52,143	970,221
Strategic Programs	3,767,570	4,091,534	6,704,523	-1,559,836	5,144,687
Tactical Programs	70,236	133,243	104,228	200,374	304,602
Intelligence and Communications	255,597	222,833	144,012	37,240	181,252
Defensewide Mission Support	1,687,707	1,728,513	1,765,184	-124,975	1,640,209
	174,966	415,189	380,353	46,476	426,829
Total Research Development Test & Eval Def Ag	6,768,110	7,661,825	10,120,664	-1,452,864	8,667,800

Summary Recap of FYDP Programs

	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED FY 1989
General Purpose Forces					
Intelligence and Communications	60,705	68,782	74,708	-6,198	68,510
Research and Development (FYDP Program 6)	1,719,134	1,790,114	1,792,743	-88,191	1,704,552
Central Supply and Maintenance	4,981,313	5,769,160	6,163,297	-1,322,656	6,840,641
Support of Other Nations	5,359	10,295	89,424	-55,035	34,389
Special Operations Forces	1,599	484	492	-51	441
		22,990		19,267	19,267
Total Research Development Test & Eval Def Ag	6,768,110	7,661,825	10,120,664	-1,452,864	8,667,800

UNCLASSIFIED

UNCLASSIFIED
Defense Agencies
FY 1989 R D T & E Program

Exhibit R-1

Summary

Date: February 1988

Thousands of Dollars

	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED FY 1989
Summary Recap of Defense Agencies					
Defense Mapping Agency	253,997	304,103	314,177	-11,056	303,121
Strategic Defense Initiative Orgzn	3,279,725	3,551,000	6,282,029	-1,736,118	4,545,911
Office of Secretary/Defense	547,414	989,621	507,797	632,986	1,140,783
Defense Advanced Research Projects Agcy	779,506	879,542	935,042	-149,196	785,846
National Security Agency					
Defense Nuclear Agency	306,019	302,888	393,446	-46,598	346,848
Defense Support Project Office	213,225	228,487	110,162	26,605	136,767
Defense Communications Agency	104,266	175,427	135,990	48,119	184,109
Joint Tactical C3 Agency	60,058		72,598	-72,598	
Defense Logistics Agency	31,983	62,020	51,641	-7,417	44,224
Uniformed Services University (USUHS)	1,897	2,442	2,832	-762	2,070
Total	6,768,110	7,661,825	10,120,664	-1,452,864	8,667,800
Research Development Test & Eval Def Ag					

UNCLASSIFIED

Defense Agencies
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	Thousands of Dollars					S
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED & FY 1989 C	
1	0601101E Defense Research Sciences	1	88,976	80,000	97,535	-8,043	89,492	U
2	0601101W In-House Laboratory Independent Research	1	1,897	2,442	2,832	-762	2,070	U
3	0601103D University Research Initiatives	1		85,000		95,000	95,000	U
4	0601103E University Research Initiatives	1	9,030		25,000	-25,000		U
5	0601104D Defense University Research Instrumentation Program	1		24,608				U
6	0602101E Technical Studies	1		1,700	1,800		1,800	U
7	0602301E Strategic Technology	1	206,987	311,500	256,400	-28,760	227,640	U
8	0602702E Tactical Technology	1	96,307	116,245	142,551	-25,680	116,871	U
9	0602707E Particle Beam Technology	1	14,500	14,000	14,000		14,000	U
10	0602708E Integrated Command and Control Technology	1	37,873	32,000	38,400	-5,040	33,360	U
11	0602712E Materials and Electronics Technology	1	30,594	59,000	26,700	-6,160	20,540	U
12	0602714E Nuclear Monitoring	1	19,021	24,330	22,600		22,600	U
13	0602715H Defense Nuclear Agency	1	306,019	302,888	393,446	-46,598	346,848	U
14	0602716B Mapping, Charting and Geodesy	1	830	300	1,100	-1,100		U
15	0602718D Environmental Hazard Research	1		16,500				U
Technology Base								
16	0603220C SDI-Surveillance, Acquisition, Tracking and Kill Assessment	2	812,034	1,070,513	1,022,364	-52,143	970,221	
17	0603221C SDI-Directed Energy Weapons	2	922,986	955,523	1,859,530	-734,905	1,124,625	U
18	0603222C SDI-Kinetic Energy Weapons	2	853,131	832,326	1,245,820	-215,926	1,029,894	U
			722,493	791,549	1,199,650	-263,356	936,294	U

UNCLASSIFIED

Page D-1

UNCLASSIFIED

Defense Agencies
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No Number		Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED & FY 1989 C	S
Thousands of Dollars									
19	0603223C	SDI-Systems Concepts and Battle Management/C3	2	385,790	503,156	787,510	-147,616	639,894 U	
20	0603224C	SDI-Survivability, Lethality, and Key Support Technology	2	375,300	448,670	1,162,189	-371,775	790,414 U	
21	0603225D	Joint DoD-DoE Munitions Technology Development	2	7,176	14,768	8,614	-898	7,716 U	
22	0603226E	Experimental Evaluation of Major Innovative Technologies	2	151,774	215,133	272,246	-47,200	225,046 U	
23	0603227E	Relocatable Target Detection Technology Program	2		5,000	17,400	-2,000	15,400 U	
24	0603269E	National Aero Space Plane Technology Program	2	100,000				U	
25	0603702D	Special Operations, Special Technology Office	2	4,015		8,836	-8,836	U	
26	0603703D	Counter-Insurgency and Special Technology	2	12,201		10,375	-10,375	U	
27	0603706D	Microwave/Millimeter Wave Monolithic Integrated Circuits (MIMIC)	2	10,274	45,466	86,038	-18,974	67,064 U	
28	0603736D	Computer Aided Logistics Support	2	13,639	9,845	12,932	-1,350	11,582 U	
29	0603737D	Balanced Technology Initiative	2	182,314	200,000		238,000	238,000 U	
30	0603738D	Cooperative DoD/VA Medical Research	2		15,000			U	
31	0603740D	RACER	2		5,000			U	
32	0603756D	Consolidated DoD Software Initiatives	2	24,389	24,567	30,726	6,394	37,120 U	
33	0305108K	Command and Control Research	2	2,088	2,541	2,657	-286	2,371 U	
34	1110011D	Force Enhancements-Active	2		10,827		10,405	10,405 U	
35	1140011D	Advanced Special Operations Research, Development and Acquisition	2		12,163		8,862	8,862 U	
Advanced Technology Development				3,767,570	4,091,534	6,704,523	-1,559,836	5,144,687	
36	0603734K	Island Sun	3	27,706	49,457	63,898	-6,880	57,018 U	

Page D-2

UNCLASSIFIED

UNCLASSIFIED

Defense Agencies
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
37 0603741D	Air Defense Initiative	3		49,224		213,574	213,574 U
38 0302016K	National Military Command System-Wide Support	3	10,200	10,616	12,405	-6,714	5,691 U
39 0302019K	WWMCCS Systems Engineer	3	22,037	15,573	17,193	1,341	18,534 U
40 0303131K	Minimum Essential Emergency Communications Network (MEECN)	3	10,293	8,373	10,732	-947	9,785 U
Strategic Programs							
41 0604702D	Joint Standoff Weapons Program	4	70,236	133,243	104,228	200,374	304,602
42 0604771D	Joint Tactical Information Distribution System (JTIDS)	4	194,892	78,760	69,304	-7,228	15,900 U
43 0201135K	CINC C2 Initiatives	4	647	2,067	2,110	-227	62,076 U
44 0208045K	C3 Interoperability (Joint Tactical C3 Agency)	4		61,715			1,883 U
45 0208045Q	C3 Interoperability (Joint Tactical C3 Agency) (FY 87 and prior)	4	55,216		65,419	-65,419	60,264 U
46 0208298K	Management Headquarters (Joint Tactical C3 Agency)	4		5,000		6,363	U
47 0208298Q	Management Headquarters (Joint Tactical C3 Agency) (FY 87 and prior)	4	4,842		7,179	-7,179	6,363 U
48 0305141D	Joint Remotely Piloted Vehicles Program	4		50,291		34,766	U
Tactical Programs							
49 0603701B	Mapping, Charting, Geodesy Investigations, and Prototype Development	5	255,597	222,833	144,012	37,240	34,766 U
50 0604701B	Mapping, Charting, and Geodesy Engineering Development and Test	5	1,791	12,168	11,347	-5,923	181,252
51 0604703D	LANDSAT	5		3,782	4,081	-2,701	5,424 U
52 0301011G	Cryptologic Activities	5		9,843			1,380 U
							U

UNCLASSIFIED

Defense Agencies
 FY 1989 R D T & E Program
 Appropriation: 0400 D Research Development Test & Eval Def Ag

Exhibit R-1

Date: February 1988

Program Line Element No	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	Thousands of Dollars	
						FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
53	0301301L General Defense Intelligence Program	5					
54	0303126K Long-Haul Communications (DCS)	5	26,535	16,511	22,593	-4,321	18,272 U
55	0303127K Support of the National Communications System	5	4,760	3,574	4,402	-474	3,928 U
56	0303401G Communications Security (COMSEC)	5					
57	0305139B DMA Exploitation Modernization Program	5	235,829	285,000	293,317		293,317 U
58	0305154I Airborne Reconnaissance Support Program	5		87,100		98,561	98,561 U
59	0305159B Defense Reconnaissance Support Activities	5	4,147	2,853	4,332	-1,332	3,000 U
60	0305159G Defense Reconnaissance Support Activities	5					
61	0305159I Defense Reconnaissance Support Activities	5	213,225	141,387	110,162	-71,956	38,206 U
62	0305167G Computer Security	5					
63	0305884L Intelligence Planning & Review Activities	5					
64	0305885G Tactical Cryptologic Activities	5					
Intelligence and Communications							
65	0603739D Semiconductor Manufacturing Technology	6	1,687,707	1,728,513	1,765,184	-124,975	1,640,209
66	0603790D NATO Research and Development	6	36,784	98,450	50,000	-5,215	44,785 U
67	0605104D Technical Support to USD(A)	6	15,052	147,675	58,967	141,631	200,598 U
68	0605106D General Support for PA&E	6	2,218	17,295	29,687	-11,220	18,467 U
69	0605107D General Support for Policy	6	5,109	2,179	4,530	-2,177	2,353 U
70	0605108D General Support for Net Assessment	6	3,508	5,470	8,654	-2,907	5,747 U
				3,515	5,375	-1,563	3,812 U

Page D-4

UNCLASSIFIED

UNCLASSIFIED

Defense Agencies
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No Number		Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED & FY 1989 C	Thousands of Dollars
71	0605109D	General Support for FM&P	6	1,608	1,531	2,604	-973	1,631 U	
72	0605110D	Technical Support to USD(A)--Critical Technology	6	3,194	3,175	4,430	-462	3,968 U	
73	0605112D	Rand National Defense Research Institute	6	15,373	16,259	17,452	79	17,531 U	
74	0605114E	BLACK LIGHT	6	3,600	3,600	4,000	-400	3,600 U	
75	0605116D	General Support to C3I	6	2,390	2,354	2,867	-299	2,568 U	
76	0605117D	Foreign Material Acquisition and Exploitation	6	9,196	9,845	13,868	-3,505	10,363 U	
77	0605119D	General Support for P&L	6	2,483	2,558	3,422	-557	2,865 U	
78	0605502E	Small Business Innovative Research	6	7,851				U	
79	0605711S	Critical Technology Analysis	6	2,133	29,019	4,400		4,400 U	
80	0605801S	Defense Technical Information Center	6	19,912	19,792	29,444	-5,620	23,824 U	
81	0605802S	Information Analysis Centers	6	4,579	4,883	6,997	-1,797	5,200 U	
82	0605872E	Productivity Investments	6		2,000	1,000	-1,000	U	
83	0605898C	Management Headquarters (Strategic Defense Initiative)	6	20,025	19,776	27,330	-2,540	24,790 U	
84	0605898E	Management Headquarters (Research and Development)	6	12,993	15,034	15,410	87	15,497 U	
85	0702807D	Infrared Focal Plane Array	6		1,969	78,624	-55,035	23,589 U	
86	0708011S	Industrial Preparedness	6	5,359	8,326	10,800		10,800 U	
87	1001015D	Technology Security Functions	6	1,599	484	492	-51	441 U	
Defensewide Mission Support				174,966	415,189	380,353	46,476	426,829	
Total Research Development Test & Eval Def Ag				6,768,110	7,661,825	10,120,664	-1,452,864	8,667,800	

UNCLASSIFIED

Page D-5

UNCLASSIFIED

Defense Agencies
FY 1989 R D T & E Program

Exhibit R-1

Summary

Date: February 1988

Thousands of Dollars

	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED FY 1989
Summary Recap of Research Categories					
Engineering Development Management and Support	119,906	31,600 150,516	40,900 145,228	-8,900 -10,328	32,000 134,900
Research and Development (FYDP Program 6)	119,906	182,116	186,128	-19,228	166,900
Total Director of Test & Eval Defense	119,906	182,116	186,128	-19,228	166,900
Summary Recap of Budget Activities					
Defensewide Mission Support	119,906	182,116	186,128	-19,228	166,900
Total Director of Test & Eval Defense	119,906	182,116	186,128	-19,228	166,900
Summary Recap of FYDP Programs					
Research and Development (FYDP Program 6)	119,906	182,116	186,128	-19,228	166,900
Total Director of Test & Eval Defense	119,906	182,116	186,128	-19,228	166,900

UNCLASSIFIED

Page D-6

UNCLASSIFIED

Defense Agencies
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0450 D Director of Test & Eval Defense

Date: February 1988

Line No	Program Element Number	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 C	S
1	0604940D	Test Instrumentation Development	6		30,100	35,900	-5,900	30,000 U	
2	0604941D	Space System Test Capabilities	6		1,500	5,000	-3,000	2,000 U	
3	0605111D	Foreign Weapons Evaluation	6	18,010	29,811	14,864	-2,000	12,864 U	
4	0605130D	NATO Cooperative Development Testing	6	39,000	43,000	49,313	-6,500	42,813 U	
5	0605131D	Live Fire Testing	6		6,700	5,000		5,000 U	
6	0605132D	Joint Technical Coordinating Group for Aircraft Survivability	6		7,086	8,086	-1,000	7,086 U	
7	0605804D	Development Test and Evaluation	6	62,896	63,919	67,965	-828	67,137 U	
Defensewide Mission Support									
				119,906	182,116	186,128	-19,228	166,900	
Total Director of Test & Eval Defense				119,906	182,116	186,128	-19,228	166,900	

UNCLASSIFIED

Defense Agencies
FY 1989 R D T & E Program

Exhibit R-1

Summary

Date: February 1988

Thousands of Dollars

	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED FY 1989
Summary Recap of Research Categories					
Engineering Development Management and Support	11,300	59,000 11,221	138,000 11,657	-16,834 10,577	121,166 22,234
Research and Development (FYDP Program 6)	11,300	70,221	149,657	-6,257	143,400
Total Director of Operational Test & Evaluation	11,300	70,221	149,657	-6,257	143,400
Summary Recap of Budget Activities					
Defensewide Mission Support	11,300	70,221	149,657	-6,257	143,400
Total Director of Operational Test & Evaluation	11,300	70,221	149,657	-6,257	143,400
Summary Recap of FYDP Programs					
Research and Development (FYDP Program 6)	11,300	70,221	149,657	-6,257	143,400
Total Director of Operational Test & Evaluation	11,300	70,221	149,657	-6,257	143,400

UNCLASSIFIED

Page D-8

UNCLASSIFIED

Defense Agencies
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0460 D Director of Operational Test & Evaluation

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c	S
1	0604340D OT&E Capability Improvement	6		59,000	138,000	-16,834	121,166	U
2	0605118D Operational Test and Evaluation	6	11,300	11,221	11,657	577	12,234	U
3	0605133D SDS OT&E Organization	6				10,000	10,000	U
	Defensewide Mission Support		11,300	70,221	149,657	-6,257	143,400	
	Total Director of Operational Test & Evaluation		11,300	70,221	149,657	-6,257	143,400	

UNCLASSIFIED

Page D-9

UNCLASSIFIED

Defense Mapping Agency
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	FY 1987	FY 1988	Thousands of Dollars			S AMENDED e FY 1989 C
					FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	FY 1989 U	
14 0602716B	Mapping, Charting and Geodesy	1	830	300	1,100	-1,100	U	
Technology Base								
49 0603701B	Mapping, Charting, Geodesy Investigations, and Prototype Development	5	11,400	12,168	11,347	-5,923	5,424 U	
50 0604701B	Mapping, Charting, and Geodesy Engineering Development and Test	5	1,791	3,782	4,081	-2,701	1,380 U	
57 0305139B	DNA Exploitation Modernization Program	5	235,829	285,000	293,317		293,317 U	
59 0305159B	Defense Reconnaissance Support Activities	5	4,147	2,853	4,332	-1,332	3,000 U	
Intelligence and Communications								
Total Defense Mapping Agency					313,077	-9,956	303,121	
					314,177	-11,056	303,121	

UNCLASSIFIED

Page D-10

UNCLASSIFIED

Strategic Defense Initiative Orgzn
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 C
16 0603220C	SDI-Surveillance, Acquisition, Tracking and Kill Assessment	2	922,986	955,523	1,859,530	-734,905	1,124,625 U
17 0603221C	SDI-Directed Energy Weapons	2	853,131	832,326	1,245,820	-215,926	1,029,894 U
18 0603222C	SDI-Kinetic Energy Weapons	2	722,493	791,549	1,199,650	-263,356	936,294 U
19 0603223C	SDI-Systems Concepts and Battle Management/C3	2	385,790	503,156	787,510	-147,616	639,894 U
20 0603224C	SDI-Survivability, Lethality, and Key Support Technology	2	375,300	448,670	1,162,189	-371,775	790,414 U
Advanced Technology Development							
83 0605898C	Management Headquarters (Strategic Defense Initiative)	6	3,259,700	3,531,224	6,254,699	-1,733,578	4,521,121
Defensewide Mission Support							
			20,025	19,776	27,330	-2,540	24,790 U
Total Strategic Defense Initiative Orgzn			3,279,725	3,551,000	6,282,029	-1,736,118	4,545,911

UNCLASSIFIED

Page D-11

UNCLASSIFIED

Office of Secretary/Defense
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars					S AMENDED e FY 1989 C
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	FY 1989	
3	0601103D University Research Initiatives	1		85,000			95,000	95,000 U
5	0601104D Defense University Research Instrumentation Program	1		24,608				U
15	0602718D Environmental Hazard Research	1		16,500				U
	Technology Base			126,108			95,000	95,000
21	0603225D Joint DoD-DoE Munitions Technology Development	2	7,176	14,768	8,614	-898	7,716	U
25	0603702D Special Operations, Special Technology Office	2	4,015		8,836	-8,836		U
26	0603703D Counter-Insurgency and Special Technology	2	12,201		10,375	-10,375		U
27	0603706D Microwave/Millimeter Wave Monolithic Integrated Circuits (MIMIC)	2	10,274	45,466	86,038	-18,974	67,064	U
28	0603736D Computer Aided Logistics Support	2	13,639	9,845	12,932	-1,350	11,582	U
29	0603737D Balanced Technology Initiative	2	182,314	200,000		238,000	238,000	U
30	0603738D Cooperative DoD/VA Medical Research	2		15,000				U
31	0603740D RACER	2		5,000				U
32	0603756D Consolidated DoD Software Initiatives	2	24,389	24,567	30,726	6,394	37,120	U
34	1110011D Force Enhancements-Active	2		10,827		10,405	10,405	U
35	1140011D Advanced Special Operations Research, Development and Acquisition	2		12,163		8,862	8,862	U
	Advanced Technology Development		254,008	337,636	157,521	223,228	380,749	
37	0603741D Air Defense Initiative	3		49,224		213,574	213,574	U
	Strategic Programs			49,224		213,574	213,574	

Page D-12

UNCLASSIFIED

UNCLASSIFIED

Office of Secretary/Defense
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars				
			FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
41	0604702D Joint Standoff Weapons Program	4		25,000		15,900	15,900 U
42	0604771D Joint Tactical Information Distribution System (JTIDS)	4	194,892	78,760	69,304	-7,228	62,076 U
48	0305141D Joint Remotely Piloted Vehicles Program	4		50,291		34,766	34,766 U
	Tactical Programs		194,892	154,051	69,304	43,438	112,742
51	0604703D LANDSAT	5		9,843			U
	Intelligence and Communications			9,843			
65	0603739D Semiconductor Manufacturing Technology	6		98,450	50,000	-5,215	44,785 U
66	0603790D NATO Research and Development	6	36,784	147,675	58,967	141,631	200,598 U
67	0605104D Technical Support to USD(A)	6	15,052	17,295	29,687	-11,220	18,467 U
68	0605106D General Support for PA&E	6	2,218	2,179	4,530	-2,177	2,353 U
69	0605107D General Support for Policy	6	5,109	5,470	8,654	-2,907	5,747 U
70	0605108D General Support for Net Assessment	6	3,508	3,515	5,375	-1,563	3,812 U
71	0605109D General Support for FM&P	6	1,608	1,531	2,604	-973	1,631 U
72	0605110D Technical Support to USD(A)--Critical Technology	6	3,194	3,175	4,430	-462	3,968 U
73	0605112D Rand National Defense Research Institute	6	15,373	16,259	17,452	79	17,531 U
75	0605116D General Support to C3I	6	2,390	2,354	2,867	-299	2,568 U
76	0605117D Foreign Material Acquisition and Exploitation	6	9,196	9,845	13,868	-3,505	10,363 U
77	0605119D General Support for P&L	6	2,483	2,558	3,422	-557	2,865 U

UNCLASSIFIED

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Office of Secretary/Defense
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED & FY 1989 C	S
85 0702807D	Infrared Focal Plane Array	6		1,969	78,624	-55,035	23,589	U
87 1001015D	Technology Security Functions	6	1,599	484	492	-51	441	U
Defensewide Mission Support								
Total Office of Secretary/Defense								
			98,514	312,759	280,972	57,746	338,718	
			547,414	989,621	507,797	632,986	1,140,783	

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Defense Advanced Research Projects Agency
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program		Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
Line Element No	Number							
Thousands of Dollars								
1	0601101E	Defense Research Sciences	1	88,976	80,000	97,535	-8,043	89,492 U
4	0601103E	University Research Initiatives	1	9,030		25,000	-25,000	U
6	0602101E	Technical Studies	1		1,700	1,800		1,800 U
7	0602301E	Strategic Technology	1	206,987	311,500	256,400	-28,760	227,640 U
8	0602702E	Tactical Technology	1	96,307	116,245	142,551	-25,680	116,871 U
9	0602707E	Particle Beam Technology	1	14,500	14,000	14,000		14,000 U
10	0602708E	Integrated Command and Control Technology	1	37,873	32,000	38,400	-5,040	33,360 U
11	0602712E	Materials and Electronics Technology	1	30,594	59,000	26,700	-6,160	20,540 U
12	0602714E	Nuclear Monitoring	1	19,021	24,330	22,600		22,600 U
Technology Base								
22	0603226E	Experimental Evaluation of Major Innovative Technologies	2	503,288	638,775	624,986	-98,683	526,303
23	0603227E	Relocatable Target Detection Technology Program	2	151,774	215,133	272,246	-47,200	225,046 U
24	0603269E	National Aero Space Plane Technology Program	2	100,000	5,000	17,400	-2,000	15,400 U
Advanced Technology Development								
74	0605114E	BLACK LIGHT	6	251,774	220,133	289,646	-49,200	240,446
78	0605502E	Small Business Innovative Research	6	3,600	3,600	4,000	-400	3,600 U
82	0605872E	Productivity Investments	6	7,851				U
84	0605898E	Management Headquarters (Research and Development)	6	12,993	15,034	1,000	-1,000	U
Defensewide Mission Support								
				24,444	20,634	20,410	-1,313	19,097
Total Defense Advanced Research Projects Agency								
				779,506	879,542	935,042	-149,196	785,846

UNCLASSIFIED

D-15

Page D-15

UNCLASSIFIED

National Security Agency
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No	Item Nomenclature	Act	Thousands of Dollars				AMENDED e FY 1989 C
			FY 1987	FY 1988	PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	
52	0301011G Cryptologic Activities	5					S
56	0303401G Communications Security (COMSEC)	5					
60	0305159G Defense Reconnaissance Support Activities	5					
62	0305167G Computer Security	5					
64	0305885G Tactical Cryptologic Activities	5					
Intelligence and Communications							
Total National Security Agency							

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Defense Nuclear Agency
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
13	0602715H Defense Nuclear Agency	1	306,019	302,888	393,446	-46,598	346,848 U
	Technology Base		306,019	302,888	393,446	-46,598	346,848
	Total Defense Nuclear Agency		306,019	302,888	393,446	-46,598	346,848

Thousands of Dollars

UNCLASSIFIED

Page D-17

UNCLASSIFIED

Defense Support Project Office
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED & FY 1989 C	S
								Thousands of Dollars
58	03Q5154I Airborne Reconnaissance Support Program	5	213,225	87,100	110,162	98,561	98,561	U
61	0305159I Defense Reconnaissance Support Activities	5	213,225	141,387	110,162	-71,956	38,206	U
Intelligence and Communications			213,225	228,487	110,162	26,605	136,767	
Total Defense Support Project Office			213,225	228,487	110,162	26,605	136,767	

UNCLASSIFIED

Page D-18

UNCLASSIFIED

Defense Communications Agency
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c
33	0305108K Command and Control Research	2	2,088	2,541	2,657	-286	2,371 U
	Advanced Technology Development		2,088	2,541	2,657	-286	2,371
36	0603734K Island Sun	3	27,706	49,457	63,898	-6,880	57,018 U
38	0302016K National Military Command System-Wide Support	3	10,200	10,616	12,405	-6,714	5,691 U
39	0302019K WWHCCS Systems Engineer	3	22,037	15,573	17,193	1,341	18,534 U
40	0303131K Minimum Essential Emergency Communications Network (MEECN)	3	10,293	8,373	10,732	-947	9,785 U
	Strategic Programs		70,236	84,019	104,228	-13,200	91,028
43	0201135K CINC C2 Initiatives	4	647	2,067	2,110	-227	1,883 U
44	0208045K C3 Interoperability (Joint Tactical C3 Agency)	4		61,715		60,264	60,264 U
46	0208298K Management Headquarters (Joint Tactical C3 Agency)	4		5,000		6,363	6,363 U
	Tactical Programs		647	68,782	2,110	66,400	68,510
54	0303126K Long-Haul Communications (DCS)	5	26,535	16,511	22,593	-4,321	18,272 U
55	0303127K Support of the National Communications System	5	4,760	3,574	4,402	-474	3,928 U
	Intelligence and Communications		31,295	20,085	26,995	-4,795	22,200
	Total Defense Communications Agency		104,266	175,427	135,990	48,119	184,109

Thousands of Dollars

UNCLASSIFIED

Page D-19

UNCLASSIFIED

Defense Intelligence Agency
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

		Thousands of Dollars			
Program Line Element No	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989

5

5

Intelligence and Communications

Total Defense Intelligence Agency

FY 1989
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FY 1989 c

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Joint Tactical C3 Agency
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c	S
45 0208045Q	C3 Interoperability (Joint Tactical C3 Agency) (FY 87 and prior)	4	55,216		65,419	-65,419		U
47 0208298Q	Management Headquarters (Joint Tactical C3 Agency) (FY 87 and prior)	4	4,842		7,179	-7,179		U
	Tactical Programs		60,058		72,598	-72,598		
	Total Joint Tactical C3 Agency		60,058		72,598	-72,598		

UNCLASSIFIED

Page D-21

UNCLASSIFIED

Defense Logistics Agency
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED e FY 1989 c	S
Thousands of Dollars								
79 0605711S	Critical Technology Analysis	6	2,133	29,019	4,400		4,400 U	
80 0605801S	Defense Technical Information Center	6	19,912	19,792	29,444	-5,620	23,824 U	
81 0605802S	Information Analysis Centers	6	4,579	4,883	6,997	-1,797	5,200 U	
86 0708011S	Industrial Preparedness	6	5,359	8,326	10,800		10,800 U	
Defensewide Mission Support								
			31,983	62,020	51,641	-7,417	44,224	
Total Defense Logistics Agency								
			31,983	62,020	51,641	-7,417	44,224	

UNCLASSIFIED

Page D-22

UNCLASSIFIED

Uniformed Services University (USUHS)
FY 1989 R D T & E Program

Exhibit R-1

Appropriation: 0400 D Research Development Test & Eval Def Ag

Date: February 1988

Program Line Element No Number	Item Nomenclature	Act	FY 1987	FY 1988	FY 88/89 PRES BUDGET FY 1989	FY 1989 ADJUSTMENT	AMENDED & FY 1989 C
2 0601101W	In-House Laboratory Independent Research	1	1,897	2,442	2,832	-762	2,070 U
	Technology Base		1,897	2,442	2,832	-762	2,070
	Total Uniformed Services University (USUHS)		1,897	2,442	2,832	-762	2,070

Thousands of Dollars

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Page D-23

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